User's Guide to GEOMAGIA50.v3: 2. Sediment Database

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This guide is the second of a pair describing the function of the GEOMAGIA50.v3 database. The first accompanies *Brown et al.* (2015a) (referred to here as B15a). This guide constitutes the Supporting Information associated with *Brown et al.* (2015b), hereafter referred to as B15b.

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1 Guide to the function of the sediment web page

The operation of the query form and web pages listed in the navigation bar are described in the following sections.

1.1 Query form

The sediment query form (Fig. 1) can be accessed at `http://geomagia.gfz-potsdam.de/geomagiav3/SDquery.php` or through the 'Sediment query form' link in the left navigation menu. The main functions of this form are briefly described.

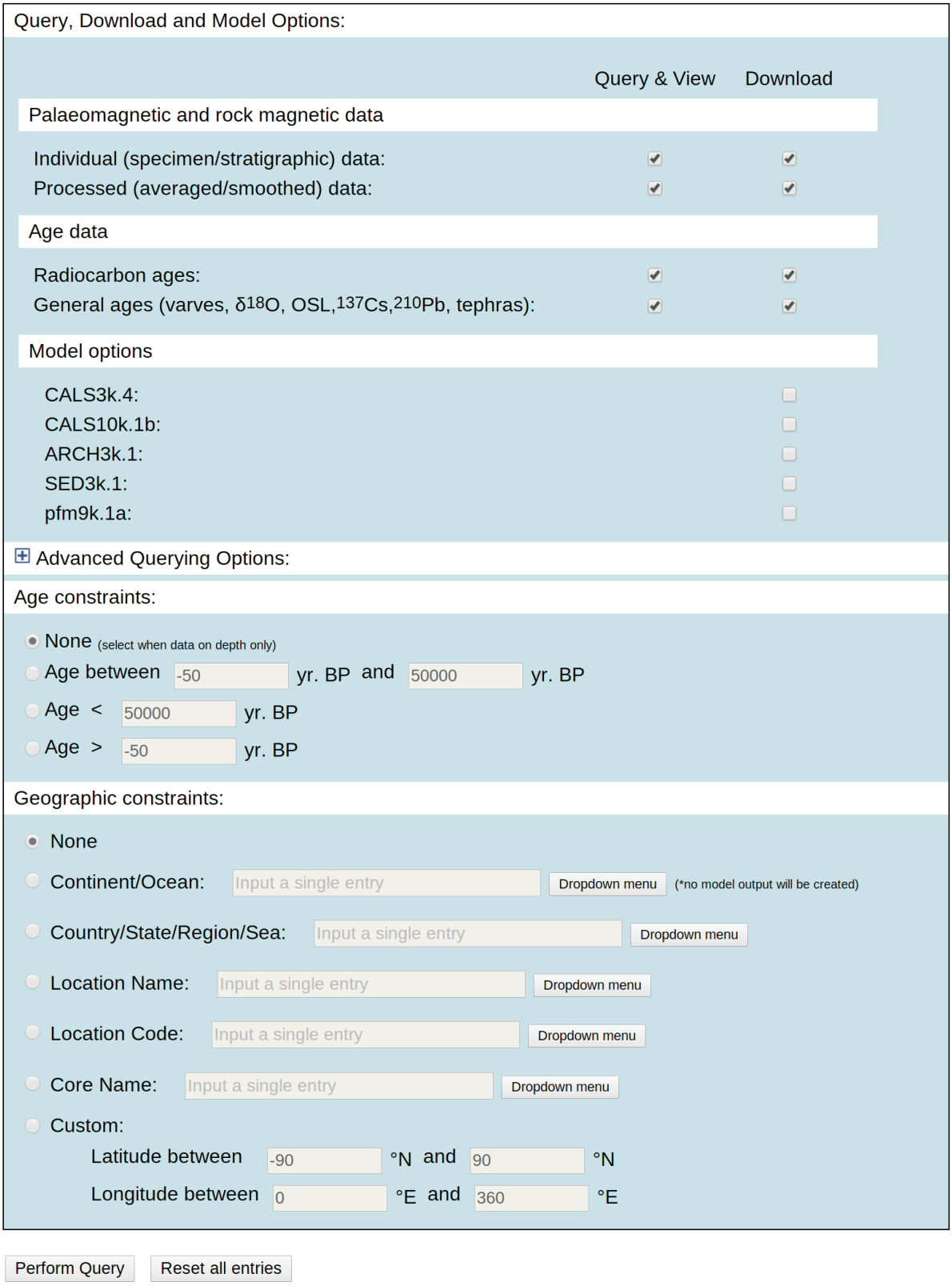

Figure 1: *Initial state of the sediment query form after the user has selected the 'Sediment query form' link from the left navigation menu on the GEOMAGIA50 home page or entered* `http://geomagia.gfz-potsdam.de/geomagiav3/SDquery.php` *into a browser's address bar.*

1.1.1 Query, download and model options

The options under this heading are described in section 'Query, download and model options' in B15b. Selecting a 'View' checkbox under 'Query, Download and Model Options' will generate an HTML table of data in a new tab in the browser once the query has been executed. Choosing a 'Download' checkbox produces a link to download a .CSV file in a new tab in the browser (Fig. 2). By default all checkboxes next to the data types to query are checked. The user can check 'View' by itself; however, if the user selects 'Download' then 'View' will also be selected. The relational tables beneath the online tables (Fig. 3) are necessary to interpret the IDs in the .CSV files.

1.1.2 Age constraints

Temporal constraints are set by one of four options, which the user chooses by selecting a radio button (Fig. 1). Selecting 'None' allows the user to retrieve whatever part of a time series lies between -50 yr. BP (2000 AD) and 50,000 yr. BP. The 'None' option also recovers data for which no age control is explicitly stated. In contrast, selecting 'Age between', 'Age <' or 'Age >' will select only data coupled with an age. All text entry boxes are deactivated (boxes appear grey and clicking on the box does not allow text entry; the appearance may vary with browser and operating system) until a radio button is selected.

1.1.3 Geographic constraints

The user has the choice of seven options to constrain the location or range of locations over which the database will query (Fig. 1). Choices are controlled by radio buttons. As with 'Age constraints', text entry boxes are only active when the associated radio button is selected. Only the entry in the text box with the activated radio button will be parsed into the database query.

With the exception of 'None' and 'Custom' two methods of location entry are possible: 'Autocomplete menu' or 'Dropdown menu' (Fig. 4). The default option when the query form loads is the autocomplete menu. The autocomplete menu allows the user to manually type an entry or part of an entry into the text box, which is activated when the radio button is selected (as with 'Age constraints'). When text is entered an array containing all entries related to the radio button selected is queried and matches are progressively displayed on the screen as a list. For example, selecting the 'Location Name' radio button and entering 'Lake' will produce a list

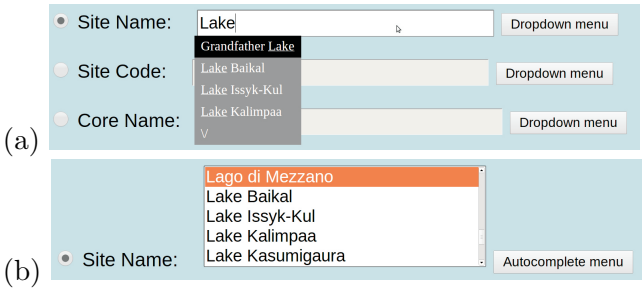

Figure 4: *Alternative methods of selecting geographic constraints using (a) an autocomplete menu or (b) a dropdown menu.*

of all the locations that include 'Lake' (Fig. 4a). The case is important. The list is truncated to the first four entries in alphabetical order, but further entries can be revealed by clicking the down arrow below the fourth entry. An entry from this list can then be selected by clicking on the desired location. This will automatically fill in the entry box. Alternatively, clicking on 'Dropdown menu' allows the user to return a full list of the entries for a certain category of geographic constraint (Fig. 4b). Entries are listed alphabetically and the user can scroll through all entries using the righthand scroll bar or can enter a letter of the alphabet to jump to the first entry starting with this letter. The entry is selected by clicking on the name of the geographic constraint. A colored bar remains behind the selected entry.

Selecting the 'None' radio button will query every location in the database. This will result in a global search over the past 50 ka and will return every entry in the database. No model output will be chosen when 'None' is selected.

'Continent/Ocean' will query all locations lying in one of the seven commonly defined continents or five commonly defined oceans. This option will generate no model output, even if one or more 'Model options' checkboxes are selected. The spatial range covered by each entry is so large that producing model output for a single arbitrary location within a continent or ocean when the structure of the field may vary significantly within these areas is uninformative.

'Country/State/Region/Sea' queries politically defined land masses or water bodies. For larger countries, e.g., USA, entries are given as states, etc, where appropriate. Model output will be produced for the geographic center of selected location.

'Location Name' contains all lake names and marine locations. For marine locations it is more common to refer to the drilling site, e.g., an ODP site number. In such cases we chose the broad location at which the core was taken, e.g., ODP Site 919

Downloads

Data type	Download
Individual specimen/horizon palaeomagnetic and rock magnetic data:	Click here to download the .csv file
Processed (averaged/smoothed) palaeomagnetic data:	No data found
Radiocarbon ages:	Click here to download the .csv file
General ages:	No data found
Reconstructed palaeomagnetic series:	No data found
Models:	Click here to download the CALS3k.4 results as a text file
	Click here to download the CALS10k.1b results as a text file
	Click here to download the ARCH3k.1 results as a text file
	Click here to download the SED3k.1 results as a text file
	Click here to download the pfm9k.1a results as a text file

Figure 2: *The appearance of the 'Download Material' tab. The left column lists all possible categories of data that can be downloaded. The right column gives the user the option to download data files via hyperlinks, depending on whether the query returned any results for a particular category of data.*

Individual (Specimen/Stratigraphic) Sediment Tables | Processed (Averaged/Smoothed) Sediment Tables | Radiocarbon Age Tables | General Age Tables | Reconstructed Palaeomagnetic Series Tables | Download Material

Summary of query parameters

Data constraints:	All records containing palaeomagnetic and rock magnetic data
Age constraints:	None
Geographic constraints:	Country/State/Region/Sea: Israel
Models:	CALS3k.4: Not requested to calculate
	CALS10k.1b: Not requested to calculate
	ARCH3k.1: Not requested to calculate
	SED3k.1: Not requested to calculate
	pfm9k.1a: Not requested to calculate

Individual (specimen/stratigraphic) query results

Found **3023** matching entries. Showing the first **10** results, click the **Download Material** tab above for the full data set.

Location Code	Environ. ID	Core ID	Lat. (°)	Lon. (°)	Sed. Rate (cm/ka)	Specimen ID	Core Depth (cm)	Comp. Depth (cm)	Age (yr. BP)	Calibrated?	Dir. ID	Min. AF Demag. (mT)	Max. AF Demag. (mT)	Dec_{raw} (°)	Inc_{raw} (°)	MAD (°)
BIR	1	BIR2-1	33.2309	35.7689	—	2	2.50	2.50	8	Y	1	15	65	217.6	15.5	3.9
BIR	1	BIR2-1	33.2309	35.7689	—	2	5.00	5.00	16	Y	1	15	50	219.2	23.5	3.3
BIR	1	BIR2-1	33.2309	35.7689	—	2	7.40	7.40	24	Y	1	15	65	238.8	39.1	1.8
BIR	1	BIR2-1	33.2309	35.7689	—	2	9.80	9.80	32	Y	1	15	65	235.4	29.7	2.1
BIR	1	BIR2-1	33.2309	35.7689	—	2	12.20	12.20	40	Y	1	15	65	250.1	48.0	1.5
BIR	1	BIR2-1	33.2309	35.7689	—	2	14.50	14.50	48	Y	1	15	65	227.8	33.9	1.8
BIR	1	BIR2-1	33.2309	35.7689	—	2	16.90	16.90	55	Y	1	15	50	227.0	32.7	2.5
BIR	1	BIR2-1	33.2309	35.7689	—	2	19.20	19.20	63	Y	1	15	65	234.9	43.0	2.0
BIR	1	BIR2-1	33.2309	35.7689	—	2	21.60	21.60	71	Y	1	15	65	257.4	40.5	1.6
BIR	1	BIR2-1	33.2309	35.7689	—	2	24.10	24.10	79	Y	1	15	65	254.4	43.4	2.2

Location Names

Location Code	Location Name	Country/State/Region/Sea	Continent/Ocean
BIR	Birkat Ram	Israel	Asia
DSE	Ein Gedi	Israel	Asia
DSF	Ein Feshka	Israel	Asia
DSZ	Zeelim	Israel	Asia

References

Reference Group ID	Reference ID	Authors	Year	Publication	Volume	Pages	DOI
9	44	Frank U., Schwab M. J., Negendank J. F. W.	2002	Phys. Earth Planet. Inter.	133	21-34	10.1016/S0031-9201(02)00085-7
9	45	Frank U., Schwab M. J., Negendank J. F. W.	2003	J. Geophys. Res.	108	2379	10.1029/2002JB002049
9	46	Schwab M. J., Neumann F., Litt T., Negendank J. F. W., Stein M.	2004	Quat. Sci. Rev.	23	1723-1731	10.1016/j.quascirev.2004.05.001
14	40	Frank U., Nowaczyk N. R., Negendank J. F. W.	2007	Geophys. J. Int.	168	904-920	10.1111/j.1365-246X.2006.03263.x
14	41	Frank U., Nowaczyk N. R., Negendank J. F. W.	2007	Geophys. J. Int.	168	921-934	10.1111/j.1365-246X.2006.03273.x

Figure 3: *The appearance of the results web page showing the six on-page tabs. The first few output columns of the 'Individual Specimen/Stratigraphic Level Sediment Tables' tab are shown for an example query from Israel, along with two examples of relational tables ('Location Names' and 'References') accompanying this query. The underlined entries are hyperlinks.*

(*Channell*, 2006) was located in the Irminger Basin. More familiar coring site numbers are listed under 'Core Name'.

Every location name is assigned a three letter location code as used in the CALSxk series of models (see Table 1. in *Korte et al.*, 2011). Once known, by entering this code in 'Location Code' the user can quickly query a location, rather than scrolling through a list of locations or typing in part of or a full location name. This is especially efficient for repeating queries for a certain location. The list of location codes will increase through time as more locations are added to the database and will exceed those given in *Korte et al.* (2011). The location name corresponding to a location code can be found when the map of sediment locations is opened in maps.google.com (see section 1.2).

'Core Name' queries for the name of core as listed in a publication. Only one core can be queried at a time. For lake locations multiple cores are often taken and data from only one core may be of interest. This is the preferred option for searching for marine core data and includes, e.g., IODP, ODP and MD Site numbers in the name.

'Custom' is the most flexible geographic constraint and is particularly useful for regional studies, e.g., for retrieving data from only the Southern Hemisphere or from a geographic area which crosses political borders, such as the area surrounding the Mediterranean. Longitude can be entered as positive or negative degrees east (between -180° E and 180° E or 0° and 360° E), with a range no greater than 360°. Error messages will appear if the this range is exceeded, if the two longitudes have the same value or if the longitudes lie outside -180° E to 360° E. Latitude errors are given when values greater than 90°N or less than -90°N are entered, or when the same value is entered in both boxes.

1.1.4 Advanced querying options

Advanced query options are accessed by click on the plus sign next to the section header (Fig. 1). Once clicked the web page expands vertically and reveals three boxes containing additional querying options. The default setting is to query all data (Fig. 5a). Individual paleomagnetic and rock magnetic data are set to 'Non-specific' and all general age options are selected. This will return the same results as if advanced querying options boxes were not revealed.

The two query boxes on the left hand side allow the user to refine their search of the individual paleomagnetic and rock magnetic data. 'Directions',

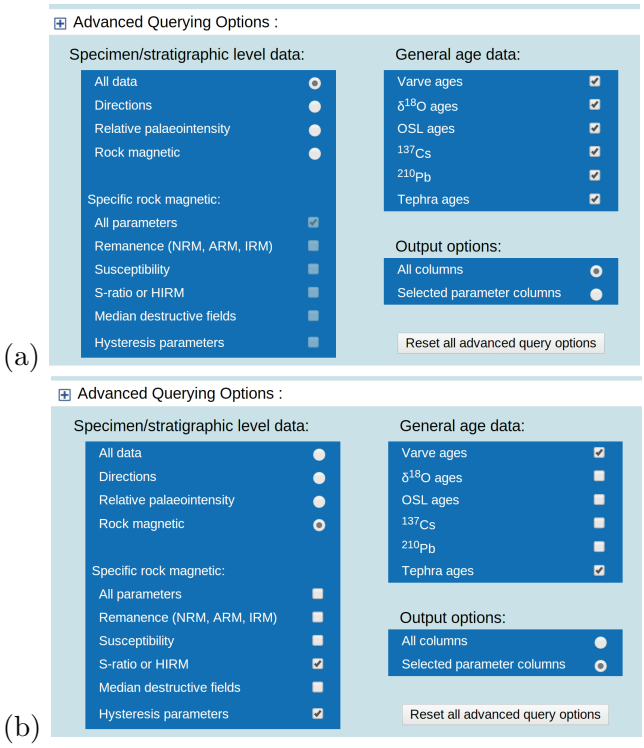

Figure 5: *Examples of the advanced query form: (a) with default options and (b) with refined data querying and output options.*

' Relative paleointensity' and 'Rock magnetic' data are selected by clicking between radio buttons. If the 'Rock magnetic' radio button is selected, then a series of check boxes are revealed under the heading 'Specific rock magnetic'. These allow the user to further refine their search (Fig. 5b).

'General age data' options are chosen by selecting the check boxes on the right side of the screen. As with the rock magnetic options, multiple choices can be made (Fig. 5b).

'Output options' allows the user to choose which data are written to the screen and saved on download. There are two options: (1) 'All columns' and (2) 'Selected parameter columns'. 'All columns' outputs every column of data for an entry that contains one of the advanced querying options selected. For example, if 'All columns' is selected in conjunction with 'Rock magnetic', and only the 'Hysteresis parameters' check box is chosen, then all hysteresis columns (Mr, Mrs, Hc and Hcr) are output for entries containing one of these parameters, along with all other fields (NRM, susceptibility, etc).

If 'Selected parameter columns' is chosen only the fields for which the data exist are output. For the hysteresis example, Mr, Mrs, Hc and Hcr and the location metadata are shown as output. 'Output options' works with both individual paleomagnetic

and rock magnetic options and general age data.

Default options can be reinstated by clicking the 'Reset all advanced query options' button. Closing the 'Advanced querying options' panel by clicking on the minus symbol at the top of panel (as in the default state when the sediment query form loads) deactivates all options within the panel; however, does not reset them. Therefore if the panel is again opened previous selected options are again visible and active.

1.2 Navigation menu options for sediments

The 'Complete sediment data sets' web page (http://geomagia.gfz-potsdam.de/complete_sediment_data.php) opens a new web page containing .CSV files of the five results tables. The amount of individual data is prohibitively large to print to the screen efficiently when no constraints are chosen. When a user queries the database without selecting any constraints, they are redirected to this web page. In addition, it contains a summary of all identification numbers (section 'Metadata tables and identification numbers' in B15b). All files can be downloaded at once as a .zip file. The version of the tables are denoted with the date of creation at the end of the file name.

The 'Glossary of IDs' web page (http://geomagia.gfz-potsdam.de/ID_glossary.php) lists all metadata tables and the IDs found within any of the results tables. The metadata table names are listed at the top of the page. Each table is a hyperlink. Clicking on the metadata table name takes the user to the appropriate metadata table, e.g., clicking on 'Location Codes for Sediments' takes the user to a table containing the three letter short code of all the location names accompanied by their full name. The tables shown on this page are related to the both the sediment database and the archeomagnetic and volcanic database (B15a). The webpage automatically updates as new data are supplemented to the metadata tables, e.g., if a new location and code is added, this will appear in the 'Location Codes for Sediments' table (http://geomagia.gfz-potsdam.de/ID_glossary.php#SedLocCode).

The 'Available sediment studies' web page (http://geomagia.gfz-potsdam.de/sedimentstudies.php) contains a full reference list for studies included in the database. The number of references currently within the database is listed above the reference table header. This is calculated for the number of references, not the number of reference groups. The references can be ordered by ID, Group ID (section 'Metadata' in B15b), first author surname, year of publication and journal. The IDs and Group IDs are the same as those listed under 'Reference ID' and 'Reference Group ID' in the five results tables (Fig. 3). Every reference is accompanied by either a hyperlinked DOI or a hyperlink to an online holding of the source material. The final column lists hyperlinks to the MagIC database, if data from a particular reference are also stored within the MagIC database (http://earthref.org/MAGIC/). This is the case for data used in the SEDPI06 compilation of *Tauxe and Yamazaki* (2007). Two search boxes allow the user to search for references based on author or by words contained with the title of a publication. The author search will search though all authors and coauthors.

The 'Map of sediment locations' web page (http://geomagia.gfz-potsdam.de/sedimentmap.php) takes the user to a web page containing a Google map that shows the locations of all sediment locations currently uploaded to the database (Fig. 6). Each location is marked with a balloon. Clicking on the balloon reveals basic location and core level information. At the bottom of the map there is a link to open the map on the maps.google.com web page. This expands the map and gives the user a list of all locations on the left hand side of the map.

2 Description of database output

This section contains six tables (Tables S1 to S6) describing the output headers of the online tables and the .CSV data files. The model .TXT files are described in Additional File 1 of B15a.

References

Brown, M. C., F. Donadini, M. Korte, A. Nilsson, K. Korhonen, A. Lodge, S. N. Lengyel, and C. G. Constable (2015a), GEOMAGIA50.v3: 1. general structure and modifications to the archeological and volcanic database, *submitted to Earth Planets Space*.

Brown, M. C., F. Donadini, U. Frank, S. Panovska, A. Nilsson, K. Korhonen, M. Schuberth, M. Korte, and C. G. Constable (2015b), GEOMAGIA50.v3: 2. a new paleomagnetic database for lake and marine sediments, *submitted to Earth Planets Space*.

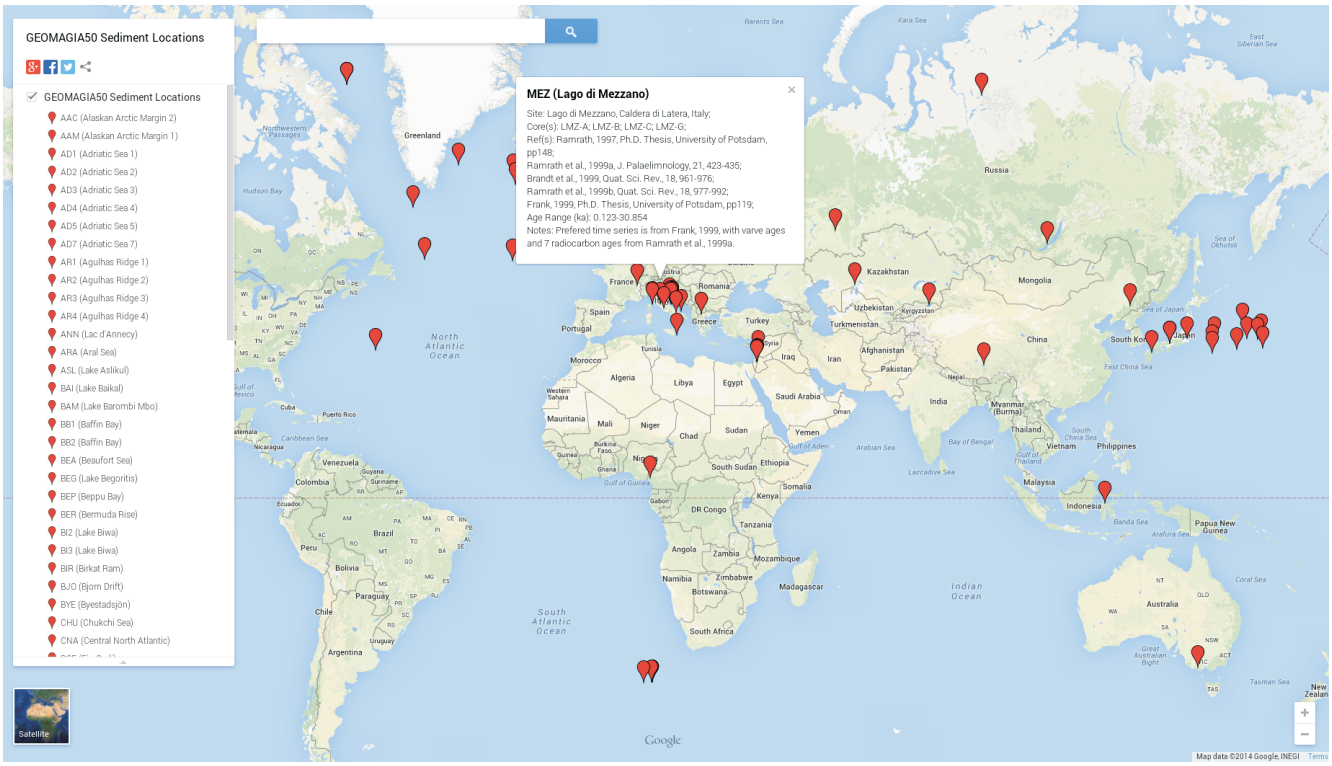

Figure 6: *Google map of sediment locations included in the GEOMAGIA50 database (December 2014) opened in maps.google.com.*

Channell, J. E. T. (2006), Late Brunhes polarity excursions (Mono Lake, Laschamp, Iceland Basin and Pringle Falls) recorded at ODP Site 919 (Irminger Basin), *Earth Planet. Sci. Lett.*, *244*, 378–393, doi:10.1016/j.epsl.2006.01.021.

Kirschvink, J. L. (1980), The least-squares line and plane and the analysis of palaeomagnetic data, *Geophys. J. R. astr. Soc.*, *62*, 699–718, doi:10.1111/j.1365-246X.1980.tb02601.x.

Korte, M., C. Constable, F. Donadini, and R. Holme (2011), Reconstructing the Holocene geomagnetic field, *Earth Planet. Sci. Lett.*, *312*, 497–505, doi:10.1016/j.epsl.2011.10.031.

Piper, J. D. A. (1989), *Palaeomagnetism, in Geomagnetism, edited by J. A. Jacobs*, vol. 3, Academic Press, London.

Tauxe, L., and T. Yamazaki (2007), 5.13 - paleointensities, in *Treatise on Geophysics*, edited by G. Schubert, pp. 509 – 563, Elsevier, Amsterdam, doi:10.1016/B978-044452748-6.00098-5.

Online table header	CSV file header	Description	Results tables
Age (yr. BP)	Age[yr.BP]	Age in years BP to nearest year.	1,2,5
Age-Depth Model ID	AgeDepthModelID	IDs of procedures used to transfer depth to age. http://geomagia.gfz-potsdam.de/ID_glossary.php#AgeModelID	1,2,5
Calib. dataset ID	CalibDatasetID	ID of the dataset used to calibrate for atmospheric variations in ^{14}C through time. http://geomagia.gfz-potsdam.de/ID_glossary.php#C14DataSet	3,5
Calibrated?	AgeCalib	If ^{14}C ages were calibrated in the construction of the time series (Y=yes; N=No; NA=no ^{14}C ages used).	1,2
Comp. Depth (cm)	CompDepth[cm]	Composite or final depth scale after all correlations and adjustments (cm).	1,2,5
Comp. Depth$_{min}$ (cm)	CompDepthMin[cm]	Minimum (shallowest) composite depth reported (cm).	3,4
Comp. Depth$_{max}$ (cm)	CompDepthMax[cm]	Maximum (deepest) composite depth reported (cm).	3,4
Core Depth$_{min}$ (cm)	CoreDepthMin[cm]	Minimum (shallowest) raw depth reported (cm).	3,4
Core Depth$_{max}$ (cm)	CoreDepthMax[cm]	Maximum (deepest) raw depth reported (cm).	3,4
Core ID	CoreID	Name of core given in publication. If cores have been combined and it is not possible to reconcile the original name then the core is labeled 'Stack'.	1,3,5
Dec$_{adj}$ ID	DecAdjID	ID(s) of the adjustments made to declination. http://geomagia.gfz-potsdam.de/ID_glossary.php#DecAdj	1,2,5
Inc$_{adj}$ ID	IncAdjID	ID(s) of the adjustments made to inclination. http://geomagia.gfz-potsdam.de/ID_glossary.php#IncAdj	1,2,5
Environ. ID	EnvironID	Depositional environment ID. http://geomagia.gfz-potsdam.de/ID_glossary.php#EnvironID	1,2
Notes ID	NotesID	Additional descriptive notes not accommodated by other entries. http://geomagia.gfz-potsdam.de/ID_glossary.php#NoteID	1,2,3,4,5
NRM/ARM	NRM_ARM	The ratio of natural remanent magnetization (NRM) to anhysteretic remanent magnetization (ARM) used as a proxy for relative paleointensity (RPI).	1,2,5
NRM/k	NRM_k	The ratio of natural remanent magnetization (NRM) to susceptibility (k) used as a proxy for relative paleointensity (RPI).	1,2,5
NRM/IRM	NRM_IRM	The ratio of natural remanent magnetization (NRM) to isothermal remanent magnetization (IRM) used as a proxy for relative paleointensity (RPI).	1,2,5
$\pm\sigma$ yr.	Sigma[yr.]	Uncertainty on an age.	3,4
Reference Group ID	ReferenceGroupID	ID for a set of references from which data were obtained. http://geomagia.gfz-potsdam.de/sediment_studies.php	1,2,3,4,5
RPI$_{pref}$ ID	RPIprefID	ID of the author's preferred RPI normalization method. http://geomagia.gfz-potsdam.de/ID_glossary.php#RPIID	1,2
Sample Code	SampleCode	Laboratory sample code.	3,4
σ_{ID}	SigmaID	ID of the type of uncertainty. http://geomagia.gfz-potsdam.de/ID_glossary.php#RPIErrorID	2,4,5
$\sigma_{NRM/ARM}$	Sigma[NRM_ARM]	Uncertainty on NRM/ARM.	1,2,5
$\sigma_{NRM/ARM}$ ID	Sigma[NRM_ARM]ID	Type of uncertainty for NRM/ARM. http://geomagia.gfz-potsdam.de/ID_glossary.php#RPIErrorID	1,2,5
$\sigma_{NRM/IRM}$	Sigma[NRM_IRM]	Uncertainty on NRM/IRM.	1,2,5
$\sigma_{NRM/IRM}$ ID	Sigma[NRM_IRM]ID	Type of uncertainty for NRM/IRM. http://geomagia.gfz-potsdam.de/ID_glossary.php#RPIErrorID	1,2,5
$\sigma_{NRM/k}$	Sigma[NRM_k]	Uncertainty on NRM/k.	1,2,5
$\sigma_{NRM/k}$ ID	Sigma[NRM_k]ID	Type of uncertainty for NRM/k. http://geomagia.gfz-potsdam.de/ID_glossary.php#RPIErrorID	1,2,5
$\sigma_{VDM,VADM}$	Sigma[VDM_VADM]	Uncertainty on VDM or VADM (see 'VDM or VADM').	1,2
$\sigma_{VDM,VADM}$ ID	Sigma[VDM_VADM]ID	Type of uncertainty for VDM or VADM. http://geomagia.gfz-potsdam.de/ID_glossary.php#RPIErrorID	1,2
Location Code	LocationCode	Three letter location code (see section 1.1.3). http://geomagia.gfz-potsdam.de/ID_glossary.php#SedLocCode	1,2,3,4,5
Lat. (°)	Lat[deg.]	Location or core latitude (°N). Cross checked against Google Earth WGS84 datum. If erroneous then corrected and a note given in 'Notes ID'.	1,2,3,4,5
Lon. (°)	Lon[deg.]	Location or core longitude (°E). Cross checked against Google Earth WGS84 datum. If erroneous then corrected and a note given in 'Notes ID'.	1,2,3,4,5
Source ID	SourceID	ID of source of data (see section 'Data sources' in B15b). http://geomagia.gfz-potsdam.de/ID_glossary.php#UpModID	1,2,3,4,5
Upload Date	UploadDate	Date of upload to the database.	1,2,3,4,5
Uploader	Uploader	Initials of person responsible for upload of data.	1,2,3,4,5
VDM or VADM	VDM	RPI converted to a virtual dipole moment (VDM) or virtual axial dipole moment (VADM) x10^{22} Am^2.	1,2
UID	UID	Unique identification number of an entry	1,2,3,4,5

Table S1: *Fields common to two or more results tables. Arranged in alphabetical order. IDs are numbers in corresponding relational tables. These are given below the online tables and linked via hyperlinks from the ID. 'Results tables' lists the tables in which the headers appear: 1 = 'Individual (Specimen/Stratigraphic) Sediment'; 2 = 'Processed (Averaged/Smoothed) Sediment'; 3 = 'Radiocarbon Age'; 4 = 'General Age'; 5 = 'Reconstructed Palaeomagnetic Time Series'.*

Online table header	CSV file header	Description
Sed. Rate (cm/ka)	SedRate[cm/ka]	Sedimentation rate in cm/ka for specific depth ranges or an average for the core.
Specimen ID	SpecimenID	ID of the specimen type, e.g., for standard cubes or u-channels. http://geomagia.gfz-potsdam.de/ID_glossary.php#SpecID
Core Depth (cm)	CoreDepth[cm]	Raw depth of core measurements before correlation of cores or adjustments to depth (cm).
Dir. ID	DirID	ID of the method used to determine the direction of the characteristic remanent magnetization (ChRM). http://geomagia.gfz-potsdam.de/ID_glossary.php#DirID
Min. AF Demag. (mT)	MinAFDemag[mT]	Minimum alternating field (AF) (mT) used to isolate the ChRM.
Max. AF Demag. (mT)	MaxAFDemag[mT]	Maximum AF (mT) used to isolate the ChRM.
Dec_{raw} (°)	DecRaw[deg.]	Declination (°) before any corrections for, e.g., core rotation or azimuth.
Inc_{raw} (°)	IncRaw[deg.]	Inclination (°) before any corrections, e.g., sub-vertical penetration.
MAD (°)	MAD[deg.]	Maximum angular deviation determined using principal component analysis (*Kirschvink*, 1980).
Dec_{adj} (°)	DecAdj[deg.]	Final declination (°) after adjustments considered.
Inc_{adj} (°)	IncAdj[deg.]	Final inclination (°) after adjustments considered.
Susc.	Susc	Susceptibility.
Factor	Factor	Multiplicative factor (e.g., x10^{-3}) for the preceding value.
Unit	Unit	Measurement unit of susceptibility for the preceding value.
NRM_{rpi}	NRM_RPI	NRM value used in the calculation of RPI.
NRM_{rpi} $Demag_{Min}$ (mT)	NRM_RPI_Demag_Min[mT]	Minimum AF (mT) used to isolate the NRM value in NRM_{rpi}. Given if a fit through NRM-ARM or NRM-IRM spectra used.
NRM_{rpi} $Demag_{Max}$ (mT)	NRM_RPI_Demag_Max[mT]	Maximum AF (mT) used to isolate the NRM value in NRM_{rpi}. Given in isolation if a blanket demagnetization used.
NRM_{rm}	NRM_RM	NRM value used in rock magnetic analysis.
ARM_{rpi}	ARM_RPI	ARM value used in the calculation of RPI.
ARM_{rpi} $Demag_{Min}$ (mT)	ARM_RPI_Demag_Min[mT]	Minimum AF (mT) used to isolate the ARM value in ARM_{rpi}. Given if a fit through NRM-ARM spectra used.
ARM_{rpi} $Demag_{Max}$ (mT)	ARM_RPI_Demag_Max[mT]	Maximum AF (mT) used to isolate the ARM value in ARM_{rpi}. Given in isolation if a blanket demagnetization used.
ARM_{rm}	ARM_RM	ARM value used in rock magnetic analysis.
IRM_{rpi}	IRM_RPI	IRM value used in the calculation of RPI.
IRM_{rpi} $Demag_{Min}$ (mT)	IRM_RPI_Demag_Min[mT]	Minimum AF (mT) used to isolate the IRM value in IRM_{rpi}. Given if a fit through NRM-IRM spectra used.
IRM_{rpi} $Demag_{Max}$ (mT)	IRM_RPI_Demag_Max[mT]	Maximum AF (mT) used to isolate the IRM value in IRM_{rpi}. Given in isolation if a blanket demagnetization used.
IRM_{rm}	IRM_RM	IRM value used in rock magnetic analysis.
$bIRM_{rm}$	bIRM_RM	Backfield IRM (bIRM) value.
B_{IRM} (T)	IRM_B[T]	Applied field (T) used to induce an IRM.
B_{bIRM} (T)	bIRM_B[T]	Applied field (T) used to induce an bIRM.
HIRM	HIRM	Hard isothermal remanence (IRM+(-bIRM)/2.
S-ratio	S-ratio	Value of S-ratio.
S-ratio ID	S-ratioID	ID of type of S-ratio calculation. http://geomagia.gfz-potsdam.de/ID_glossary.php#SRID
MDF_{NRM} (mT)	MDF_NRM[mT]	Median destructive field of NRM (mT).
MDF_{ARM} (mT)	MDF_ARM[mT]	Median destructive field of ARM (mT).
MDF_{IRM} (mT)	MDF_IRM[mT]	Median destructive field of IRM (mT).
Mr	Mr	Remanence of saturation magnetization determined from hysteresis.
Ms	Ms	Saturation remanent magnetization determined from hysteresis.
Hc	Hc	Coercivity.
Hcr	Hcr	Backfield coercivity.
Mineral ID	MineralID	IDs of magnetic minerals present, as interpreted by author. http://geomagia.gfz-potsdam.de/ID_glossary.php#MagMin
Dating Method ID	DatingMethodID	IDs of methods used to date sediment at a specific depth. http://geomagia.gfz-potsdam.de/ID_glossary.php#DatMethod

Table S2: *Fields headers and descriptions unique to the 'Individual (Specimen/Stratigraphic) Level Sediment' online table and .CSV file. Arranged by order of appearance in table. See Table S1 for further details.*

Online table header	CSV file header	Description
N_{cores}	N_Cores	Number of cores combined in the averaging/smoothing analysis.
Core Names	CoreNames	Names of cores used to create an averaged/smoothed or reconstructed record.
Smoothing Level	SmoothingLevel	Whether smoothing is by strata or time.
$N_{specimens}$	N_SpecimensSmoothed	Number of specimens or measurements used to create each averaged/smoothed value.
Dir. Smoothing Type ID	DirSmoothingTypeID	ID of type of averaging/smoothing procedure for directional data. http://geomagia.gfz-potsdam.de/ID_glossary.php#SmoothID
Dec. (°)	Dec[deg.]	Averaged/smoothed declination (°).
Inc. (°)	Inc[deg.]	Averaged/smoothed inclination (°).
σ_{Dec} (°)	SigmaDec[deg.]	Uncertainty of averaged/smoothed declination. If uncertainty is given as α_{95}. the standard deviation is shown as: (81/140cos(I))α_{95} where I=inclination (*Piper*, 1989) (°).
σ_{Inc} (°)	SigmaInc[deg.]	Uncertainty of declination. If uncertainty is given as α_{95} the standard deviation. is shown as: (81/140)α_{95} (*Piper*, 1989) (°).
Dec_{ID}	DecID	ID(s) of the adjustments made to declination before averaging/smoothing. http://geomagia.gfz-potsdam.de/ID_glossary.php#DecID
Inc_{ID}	IncID	ID(s) of the adjustments made to inclination before averaging/smoothing. http://geomagia.gfz-potsdam.de/ID_glossary.php#IncID
RPI Smoothing Type ID	RPISmoothingTypeID	ID of the method used to averaging/smoothing RPI data. http://geomagia.gfz-potsdam.de/ID_glossary.php#SmoothID
Pmag Type ID	PmagTypeID	ID of type of measurement made to obtain raw data before averaging/smoothing. http://geomagia.gfz-potsdam.de/ID_glossary.php#SedSampID
Dating Method ID	DatingMethodID	IDs of dating methods used in the creation of an age-depth model applied across all depths. http://geomagia.gfz-potsdam.de/ID_glossary.php#DatMethod

Table S3: *Field headers and descriptions unique to the 'Processed (Averaged/Smoothed) Sediment' online table and .CSV file. See Table S1 for further details.*

Online table header	CSV file header	Description
^{14}C age (yr. BP)	14CAge[yr.BP]	Uncalibrated ^{14}C age in years BP.
N_σ	NumSigma	Number of standard deviations.
Author Accept?	AuthorAccept	Whether author accepted date in construction of age-depth model used to make a paleomagnetic time series. (Y=yes; N=no; NA=not associated with a paleomagnetic time series).
Libby Half Life	LibbyHalfLife	Value of the Libby Half Life used.
Lab Error Multiplier	LabErrorMultiplier	Value of a laboratory error multiplier if stated in publication.
Lab Code	LabCode	Laboratory code as listed in the compilation of www.radiocarbon.org.
Lab Type ID	LabTypeID	Whether laboratory is conventional (Conv.), accelerator mass spectrometer (AMS) or not listed. http://geomagia.gfz-potsdam.de/ID_glossary.php#C14LabCode
δ^{13}C (per mil w.r.t PDB)	D13C[permil.w.r.t.PDB]	Degree of isotopic fractionation between ^{12}C and ^{13}C in per mil relative to the PDB standard ratio, used to correct the measurement of ^{14}C.
$\pm\sigma$ (δ^{13}C)	Sigma[D13Cpermil.w.r.t.PDB]	Uncertainty at one standard deviation of δ^{13}C.
Reservoir Effect (yr.)	ReservoirEffect[yr.]	Estimate of the offset in years resulting from the uptake of carbon from a source (or reservoir) other than atmospheric carbon.
$\pm\sigma$ yr. (RE)	ReservoirEffectError[yr.]	Uncertainty at one standard deviation of the reservoir effect.
ΔR	DeltaR[yr.]	The regional difference (in years) from the average global marine reservoir correction. Applied to marine specimens only.
Material Type ID1	MaterialID1	ID of specific material type used for dating. http://geomagia.gfz-potsdam.de/ID_glossary.php#DatMatID1
Material Type ID2	MaterialID2	ID of a broader (vague) category of materials used for dating. http://geomagia.gfz-potsdam.de/ID_glossary.php#DatMatID2
Weight (mg)	Weight[mg]	Weight in mg.
Calib. age (yr. BP)	CalibAge[yr.BP]	Measured ^{14}C age calibrated for variations in atmospheric and marine carbon through time. In years BP.
$\pm\sigma$ yr. (calib. age)	Sigma[yr.]	Uncertainty on the calibrated age if given as a standard deviation (in years).
Min. calib. age (yr. BP)	MinCalibAge[yr.BP]	Minimum calibrated age in years BP if ages reported as minimum and maximum ages (e.g., if a probability method was used for calibration).
Max. calib. age (yr. BP)	MaxCalibAge[yr.BP]	Maximum calibrated age in years BP if ages reported as minimum and maximum ages.
Calib. age type ID	CalibAgeTypeID	ID of type of age given, e.g., a mean or median. http://geomagia.gfz-potsdam.de/ID_glossary.php#CalC14ID
Calib. software ID	CalibSoftwareID	ID of software that was used to perform the calibration. http://geomagia.gfz-potsdam.de/ID_glossary.php#C14Soft

Table S4: *Field headers and descriptions unique to the 'Radiocarbon Age' online table and .CSV file. See Table S1 for further details.*

Online table header	CSV file header	Description
Varve Age (yr. BP)	VarveAge[yr.BP]	Varve age in years before present.
Varve Age Min. (yr. BP)	VarveAgeMin[yr.BP]	Minimum varve age determined from counting errors.
Varve Age Max. (yr. BP)	VarveAgeMax[yr.BP]	Maximum varve age determined from counting errors.
δ^{18}O age (yr. BP)	Del18OAge[yr.BP]	Age in yr. BP determined from oxygen isotope data.
δ^{18}O Reference Curve ID	Del18OReferenceCurveID	ID of the reference curve used to match oxygen isotope data to a known age. http://geomagia.gfz-potsdam.de/ID_glossary.php#D18RCurve
Planktic δ^{18}O (per mil)	Del18OPlanktic[permil]	Planktic δ^{18}O value measured.
Benthic δ^{18}O (per mil)	Del18OBenthic[permil]	Benthic δ^{18}O value measured.
δ^{18}O Planktic Species ID	PlanticSpeciesID	ID of planktic species used for δ^{18}O measurement. http://geomagia.gfz-potsdam.de/ID_glossary.php#D18PSpec
δ^{18}O Benthic Species ID	BenthicSpeciesID	ID of benthic species used for δ^{18}O measurement. http://geomagia.gfz-potsdam.de/ID_glossary.php#D18PSpec
OSL Age (yr. BP)	OSLAge[yr.BP]	Optically stimulated luminescence (OSL) age in years BP.
Sample Over-Dispersion (%)	SampleOverDispersion[%]	OSL sample over-dispersion (%).
Equivalent Dose (Gy)	EquivalentDose[Gy]	OSL equivalent dose (Gy).
$\pm\sigma$ (Gy)	Sigma[Gy]	Uncertainty on OSL equivalent dose (Gy).
Environmental Dose (Gy/ka)	EnvironmentalDose[Gy/ka]	OSL environmental dose (Gy/ka).
$\pm\sigma$ (Gy/ka)	Sigma[Gy/ka]	Uncertainty on OSL environmental dose (Gy/ka).
^{137}Cs age (yr. BP)	137CsAge[yr.BP]	Caesium age in year BP.
^{210}Pb age (yr. BP)	210PbAge[yr.BP]	Lead pollution age in years BP.
Tephra Age (yr. BP)	TephraAge[yr.BP]	Age of Tephra in years BP.
Tephra Age ID	TephraAgeID	ID of the statistical method of determining the age from the http://geomagia.gfz-potsdam.de/ID_glossary.php#AgeModelID experimental measurement.
Min. Age of Tephra (yr. BP)	TephraAgeMin[yr.BP]	Minimum calibrated age in years BP if ages reported as minimum and maximum ages.
Max. Age of Tephra (yr. BP)	TephraAgeMax[yr.BP]	Maximum calibrated age in years BP if ages reported as minimum and maximum ages.
Tephra Dating Method ID	TephraDatingMethod[yr.BP]	ID of experimental dating method used. http://geomagia.gfz-potsdam.de/ID_glossary.php#DatMethod

Table S5: *Field headers and descriptions unique to the 'General Age' online table and .CSV file. Arranged by order of appearance in table. See Table S1 for further details.*

Online table header	CSV file header	Description
Reconstruction ID	ReconstructionID	Multiple IDs used to describe steps used in reconstruction. http://geomagia.gfz-potsdam.de/ID_glossary.php#RSID
N_{cores} Accepted	N_CoresAccept	Number of cores accepted in reconstruction analysis.
N_{cores} Rejected	N_CoresReject	Number of cores rejected in reconstruction analysis.
Cores Accepted	CoresAccepted	Names of cores accepted in reconstruction analysis.
Correlation Method ID	CorrelationMethodID	ID of method used for inter-core correlation. http://geomagia.gfz-potsdam.de/ID_glossary.php#SedCorrID
Dating Method ID	DatingMethodID	IDs of dating methods used in the creation of an age-depth model. http://geomagia.gfz-potsdam.de/ID_glossary.php#DatMethod
Age_{min} (yr. BP)	AgeMin[yr.BP]	Minimum age in year BP determined in age-depth modeling.
Age_{max} (yr. BP)	AgeMax[yr.BP]	Maximum age in year BP determined in age-depth modeling.
Dec. (°)	Dec[deg.]	Reconstructed declination (°).
Inc. (°)	Inc[deg.]	Reconstructed inclination (°).
σ_{Dec}	SigmaDec[deg.]	Uncertainty in reconstructed inclination (°).
σ_{Inc}	SigmaInc[deg.]	Uncertainty in reconstructed declination (°).
Original Reference Group ID	OriginalReferenceGroupID	ID of the reference group used to construct the original paleomagnetic time series. http://geomagia.gfz-potsdam.de/sediment_studies.php
Supplementary Reference Group ID	SupplementaryReferenceGroupID	ID of the group of references containing additional data used in the reconstruction of a time series. http://geomagia.gfz-potsdam.de/sediment_studies.php
Reconstruction Reference ID	ReconstructedReferenceID	ID of reference for full description of reconstruction.

Table S6: *Field headers and descriptions unique to the 'Reconstructed Paleomagnetic Time Series' online table and .CSV file. See Table S1 for further details.*