NSF Magnetics Information Consortium

http://earthref.org/MAGIC/

MagIC: Next Generation

Update on MagIC's Archived Data, Search and Analysis Tools

TOPICS

- What does MagIC do?
- Searching the MagIC Database
- MagIC Contribution Statistics
- Future Functionalities

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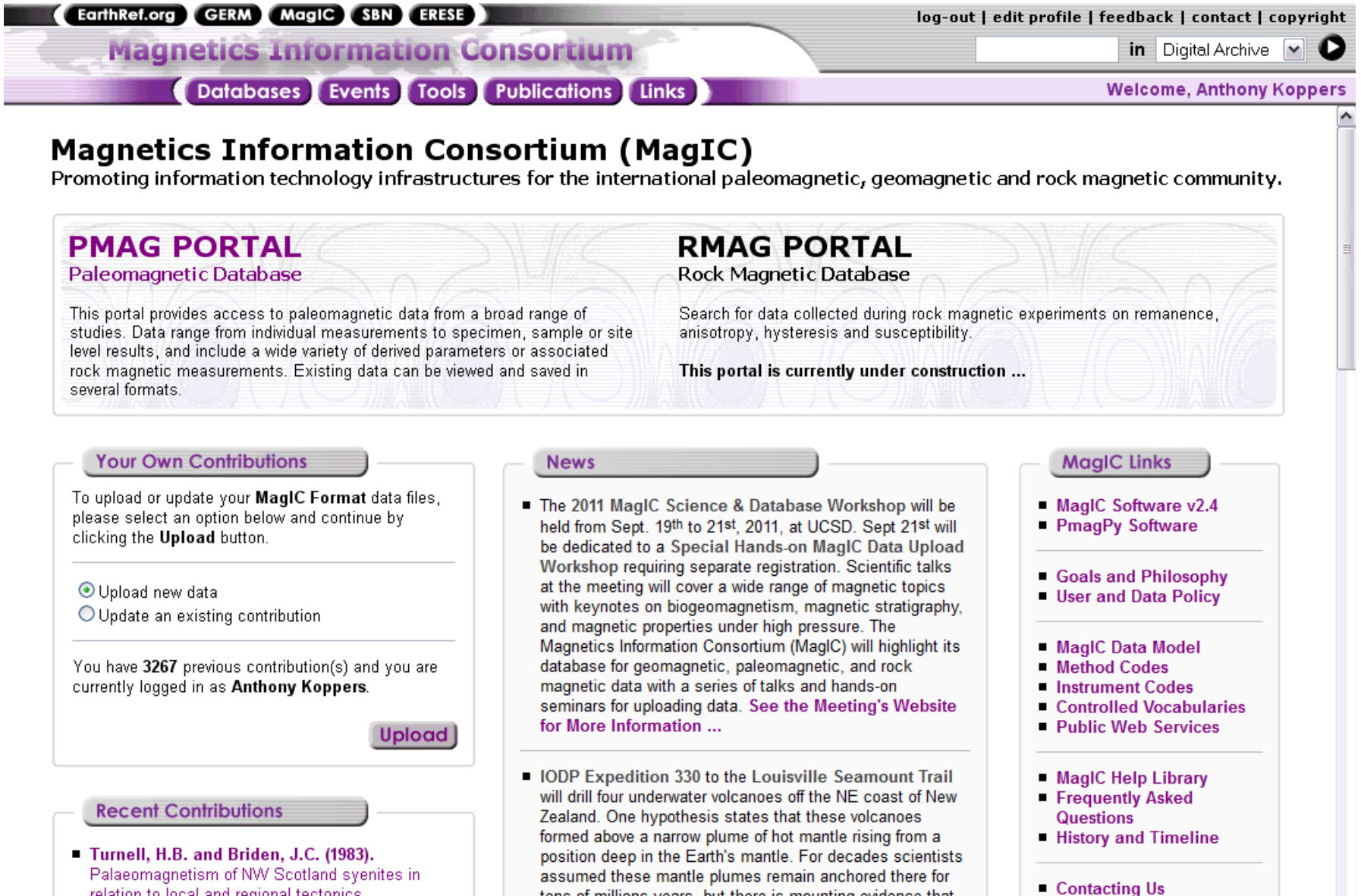
MagIC Home Page



What is MagIC (1 of 2)

It is an International Consortium which:

- Provides a resource for rock and paleomagnetic data through a database and an effective research tool on the web for scientists and students
- Allows free uploading of data and access
- Has flexibility in metadata structure, allowing for new experiments and data types
- Drills down to the basic measurements, if available
- Contains only time stamped data
- Allows data owners to update their contributions
- Provides personal "private" workspaces
- Uses community-driven data review system **JUST LAUNCHED**

What is MagIC (2 of 2)

It is an International Consortium which:

- Uses a data model that allows as much or as little data as any researcher can provide (long term goal is "real time" archiving of data as it is acquired)
- Includes migrated data from existing IAGA databases
- Educates the community in its use through online help and hands-on workshops **WEDNESDAY**
- Provides separate search portals for PMAG/RMAG **IN BETA**
- Allows filtering and queries to be saved **IN BETA**

* At the end of talk we will discuss what MagIC will become by AGU time and thereafter …

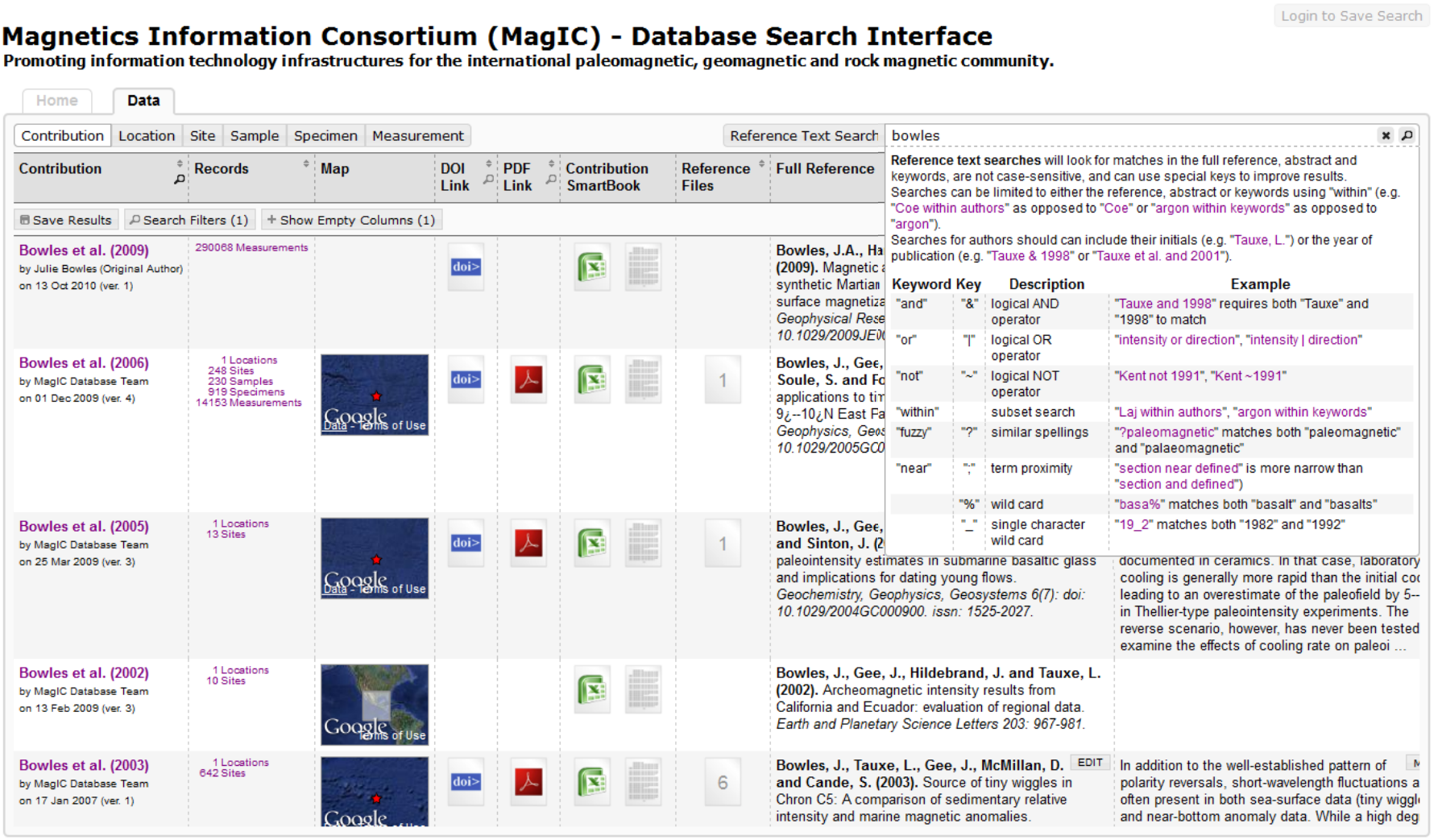
What MagIC Doesn't Do

MagIC's Ground Rules are:

- No automatic data entry into the database, users have to upload their own (or legacy) data
- Interpretations of data are the user's responsibility
- There is no uploading of "unpublished" data
- Activated data cannot be deleted, MagIC archives these and versions them when updates become available
- Data will not be recalculated but used as published in the peer-reviewed literature *

* Some data might be recombined (e.g. method codes) or translated (e.g. age units) to provide a more seamless experience to the end user when searching for and filtering the MagIC data.

New MagIC Search Interface



New MagIC Search Interface

Login to Save Search

Magnetics Information Consortium (MagIC) - Database Search Interface

Promoting information technology infrastructures for the international paleomagnetic, geomagnetic and rock magnetic community.

Home | Data

Contribution (112) | Location (229) | Site (0) | Sample (0) | Specimen (0) | Measurement (0)

Reference Text Search: Voo

Contribution	Records	Map	DOI Link	PDF Link	Contribution SmartBook	Reference Files	Full Reference	Abstract

Sort Options:

Contribution Date | Publication Year | 1st Author's Last Name

Column Filters:

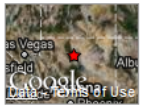
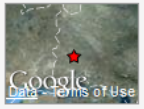
Reference text search: Voo

MDT Code: Type a search here

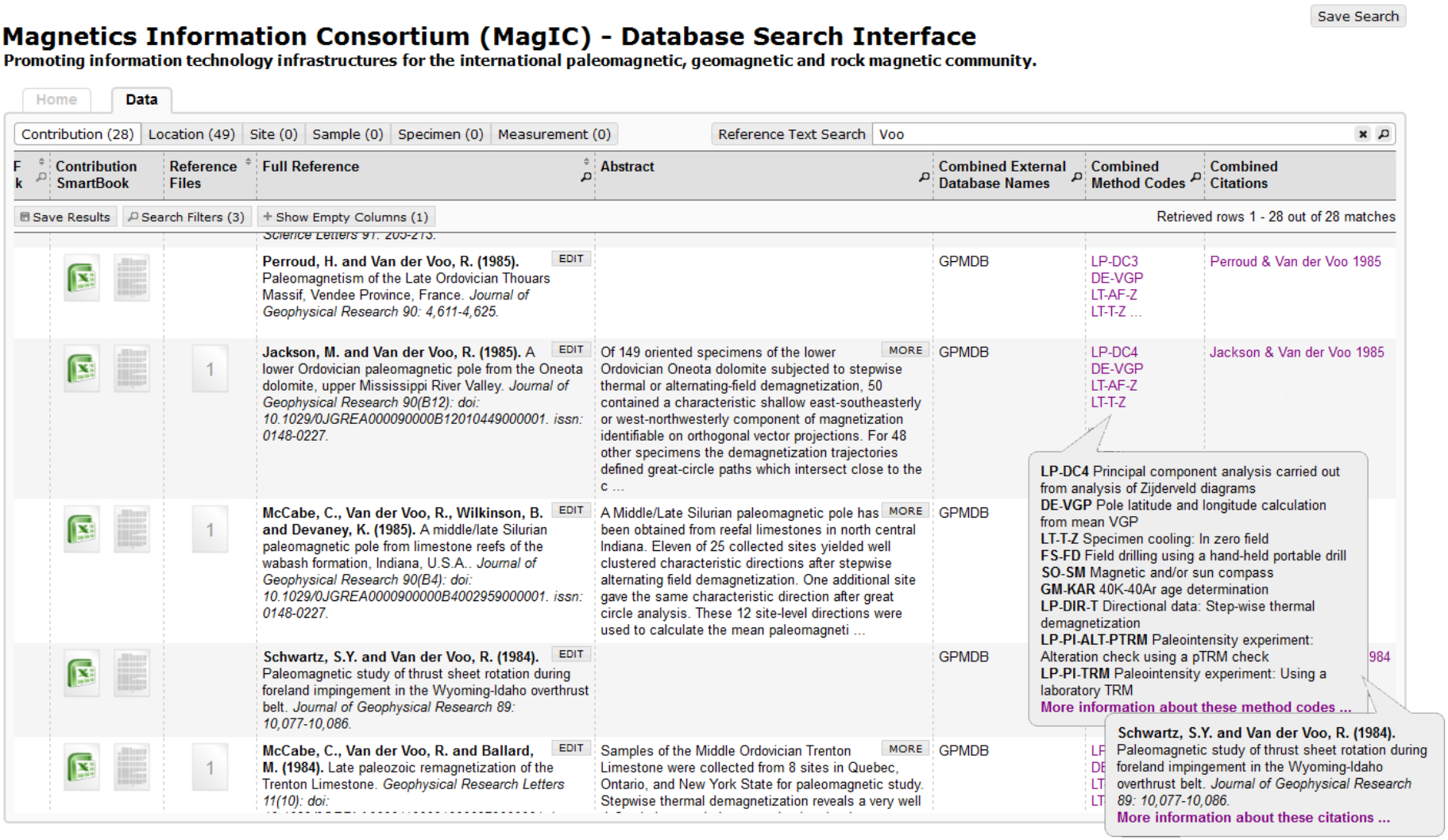
Contribution ID: Type a search here

All contribution versions: Yes | No

Retrieved rows 1 - 30 out of 112 matches

Contribution	Records	Map	DOI Link	PDF Link	Contribution SmartBook	Reference Files	Full Reference	Abstract
							Weil, A.B., Geissman, J.W. and Van der Voo, R. (2004). Paleomagnetism of the Neoproterozoic Chuar Group, Grand Canyon Supergroup, Arizona: implications for Laurentia¿s Neoproterozoic APWP and Rodinia break-up. *Precambrian Research 129: 71-92.*	
							Bazhenov, M.L., Collins, A.Q., Degtyarev, K.E., Levashova, N.M., Mikolaichuk, A.V., Pavlov, V.E. and Van der Voo, R. (2003). Paleozoic northward drift of the North Tien Shan (Central Asia) as revealed by Ordovician and Carboniferous paleomagnetism. *Tectonophysics 366: 113-141.*	
Pares et al. (2003) by MagIC Database Team on 21 Dec 2006 (ver. 1)	4 Locations		doi>			1	EDIT **Pares, J., Van der Voo, R., Downs, W., Yan, M. and Fang, X. (2003).** Northeastward growth and uplift of the Tibetan Plateau: Magnetostratigraphic insights from the Guide Basin. *Journal of Geophysical Research 108(B1): doi: 10.1029/2001JB001349. issn: 0148-0227.*	MOR Most of the evidence for the uplift of the Tibetan Plateau comes from its southern and central parts. Although the northern rim has been less studied, it may greatly contribute to the understandir of the mechanism and timing of the uplift. Recent studies on the northeastern part of the plateau suggest that the uplift can largely be explained by Cenozoic thrusting and folding linked to the moveme ...
Weil et al. (2003) by MagIC Database Team on 21 Dec 2006 (ver. 1)	2 Locations						**Weil, A.B., Geissman, J.W., Heizler, M. and Van der Voo, R. (2003).** Paleomagnetism of Middle Proterozoic mafic intrusions and Upper Proterozoic (Nankoweap) red beds from the Lower Grand Canyon Supergroup, Arisona. *Tectonophysics 375: 199-220.*	
Levashova et al. (2003) by MagIC Database Team on 21 Dec 2006 (ver. 2)	2 Locations						**Levashova, N.M., Degtyarev, K.E., Bazhenov, M.L., Collins, A.Q. and Van der Voo, R. (2003).** Permian palaeomagnetism of East Kazakhstan and the amalgamation of Eurasia. *Geophysical Journal International 152: 677-687.*	

New MagIC Search Interface



New MagIC Search Interface

Save Search

Magnetics Information Consortium (MagIC) - Database Search Interface

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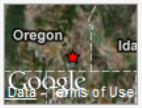
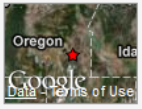
Home | Data

Contribution (46) | Location (84) | Site (750) | Sample (149) | Specimen (136) | Measurement (0)

Reference Text Search: coe

Location	Records	Map	Location Name String(50) Required	Location Name Alternatives List(300) Optional	Location Type String(50) Required	Geographic Begin Latitude Number in Degrees Required	Geographic Begin Lor Number in Degrees Required
Save Results · Search Filters (1) · Collapse All Groups · Show Empty Columns (5) · Show Column Groups (7)						Retrieved rows 1 - 30 out of 84 matches	
− Jarboe et al. (2008) ver. 5							
North Mickey 42.7676 # 241.7020 42.7717 # 241.7043 1308.5 - 1628 m above s.l.	24 Sites		North Mickey		Stratigraphic Section	42.76763	241.70203
Pueblo Mountains 41.9114 # 241.2638 42.0629 # 241.3140 1343 - 2336 m above s.l.	18 Sites 2 Samples		Pueblo Mountains		Stratigraphic Section	41.91142	241.26377
Summit Springs 43.1083 # 241.7297 43.1124 # 241.7551 1540 - 1843 m above s.l.	17 Sites 5 Samples		Summit Springs		Stratigraphic Section	43.10825667	241.72974
Guano Rim 42.0850 # 240.5340 42.0890 # 240.5410 1653 - 1795 m above s.l.	39 Sites		Guano Rim		Stratigraphic Section	42.085	240.534
− Garcia et al. (2006) ver. 1							
Great Whin Sill Intrusive Complex 55.5000 # 358.0000	43 Sites		Great Whin Sill Intrusive Complex		Region	55.5	358
− Macouin et al. (2006) ver. 1							
Mackenzie Dyke Swarm	4 Sites		Mackenzie Dyke Swarm		Region	62.76	244.28

Hidden Column Groups:

- Ages
- Paleomagnetic Results
- Anisotropy
- Hysteresis
- Remanence
- Susceptibility
- Rock Magnetic Results
- + Show All Column Groups

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Home | Data

Contribution (46) | Location (84) | Site (750) | Sample (149) | Specimen (136) | Measurement (0)

Reference Text Search: coe

Save Results | Search Filters (1) | − Collapse All Groups | + Show Empty Columns (53) | + Show Column Groups (6) | − Hide Column Groups (1)

Retrieved rows 1 - 40 out of 84 matches

Save 84 rows to *magic_download_text_file* Save .txt

Average Age High Number Recommended	Average Age Unit String(30) Recommended	Average Inclination Number in Degrees Recommended	Average Declination Number in Degrees Recommended	Average Alpha 95% Number in Degrees Recommended	Number of Sites Integer Recommended	Number of Samples Integer Recommended	Average K Number Recommended	VGP Latitude Number in Degrees Recommended	VGP Longitude Number in Degrees Recommended
					15	150	51.6	56	139
36	Ma	60.8	63.7	5.7	29	87	17.3	45.1	307.8
125	Ma	62	50.2	5.4	4	15	286.6	51.2	191.7

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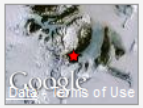
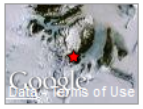
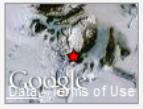
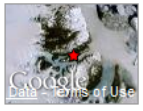
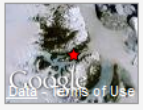
Home | Data

Contribution (0) | Location (0) | Site (129) | Sample (0) | Specimen (0) | Measurement (0)

Reference Text Search: *Type a search here*

Site	Records	Map	Images	Site Name String(50) Required	Location Name String(50) Required	Site Definition String(1) Required	Site Class String(50) Required	Site Lithology String(200) Required	Site Type String(50) Required	Site Latitude Number in Degrees Required	Site Lor Number in Required
Save Results	Search Filters (1)	Collapse All Groups	Show Empty Columns (80)	Show Column Groups (7)	Hide Column Groups (1)	Retrieved rows 1 - 30 out of 129 matches					
Lawrence et al. (2009) ver. 2 » McMurdo											
mc108 -78.2470 # 163.3230	11 Samples 8 Specimens 176 Measurements			mc108	McMurdo	s	Igneous, Extrusive	Basalt	Lava Flow	-78.247	163.323
mc118 -78.2410 # 163.1410	12 Samples 7 Specimens 92 Measurements			mc118	McMurdo	s	Igneous, Extrusive	Basalt	Lava Flow	-78.241	163.141
mc119 -78.2390 # 162.9570	12 Samples 6 Specimens 161 Measurements			mc119	McMurdo	s	Igneous, Extrusive	Basalt	Lava Flow	-78.239	162.957
mc150 -77.7140 # 162.6370	10 Samples 5 Specimens 57 Measurements			mc150	McMurdo	s	Igneous, Extrusive	Basalt	Lava Flow	-77.714	162.637
mc152 -77.7160 # 162.6450	11 Samples 8 Specimens 172 Measurements			mc152	McMurdo	s	Igneous, Intrusive	Basalt	Volcanic Dike	-77.716	162.645
mc154 -77.7190 # 162.6260	10 Samples 7 Specimens 129 Measurements			mc154	McMurdo	s	Igneous, Extrusive	Basalt	Lava Flow	-77.719	162.626

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Welcome to the MagIC Search Interface

Open the Data Tab to Start Searching!

Suggested Searches

- Recent Contributions
  http://earthref.org/MAGIC/search#recent_contributions
- My Contributions
  http://earthref.org/MAGIC/search#my_contributions
- Paleointensity Studies
  http://earthref.org/MAGIC/search#LP-PI
- Directional Studies
  http://earthref.org/MAGIC/search#LP-DIR
- Sites with Images
  http://earthref.org/MAGIC/search#sites_with_images
- GPMDB Database
  http://earthref.org/MAGIC/search#GPMDB
- PINT Database
  http://earthref.org/MAGIC/search#PINT
- PSVRL Database
  http://earthref.org/MAGIC/search#PSVRL

My Saved Searches

No saved searches yet. Use the "Save Search" button in the top right to save searches.

My Recent Searches

Clear

- #1316350717855 -- Data Tab -- 3 Filter(s)
  http://earthref.org/MAGIC/search#1316350717855
  Sunday, September 18, 2011 5:58:37 AM
- #1316350709496 -- Data Tab -- 2 Filter(s)
  http://earthref.org/MAGIC/search#1316350709496
  Sunday, September 18, 2011 5:58:29 AM
- #1316350680729 -- Data Tab -- 2 Filter(s)
  http://earthref.org/MAGIC/search#1316350680729
  Sunday, September 18, 2011 5:58:00 AM
- #1316350489429 -- Data Tab -- 2 Filter(s)
  http://earthref.org/MAGIC/search#1316350489429
  Sunday, September 18, 2011 5:54:49 AM
- #1316316074591 -- Data Tab -- 1 Filter(s)
  http://earthref.org/MAGIC/search#1316316074591
  Saturday, September 17, 2011 8:21:14 PM
- #1316315663619 -- Data Tab -- 1 Filter(s)
  http://earthref.org/MAGIC/search#1316315663619
  Saturday, September 17, 2011 8:14:23 PM
- #1316315598079 -- Data Tab -- 0 Filter(s)
  http://earthref.org/MAGIC/search#1316315598079
  Saturday, September 17, 2011 8:13:18 PM
- #1316315584308 -- Data Tab -- 0 Filter(s)
  http://earthref.org/MAGIC/search#1316315584308
  Saturday, September 17, 2011 8:13:04 PM
- #1316315578023 -- Data Tab -- 1 Filter(s)
  http://earthref.org/MAGIC/search#1316315578023
  Saturday, September 17, 2011 8:12:58 PM

Scalability Issues and Solutions

Database and Physical Storage

- San Diego Supercomputer Center (SDSC)
- Professional outfit and latest hardware
- Relatively inexpensive in terms of storage / help

Database Query Speeds

- Inheritance and adoption of important data
- Oracle multiple column and text indexing
- Query caching in Oracle

MagIC Web Interface

- Fast-CGI server / Apache web server / CGI Perl
- JQuery JavaScript / Ajax / Web 2.0 technology

EarthRef.org Database Usage

Jan 1 – Jul 13, 2010 *

- **18,716** Visits
- **10,885** Unique Visitors
- **107,862** Page Views (5.8 on average per session)
- **5:19** Time on Site per Session

Sept 14, 2010 – Sept 14, 2011 *

- **38,487** Visits
- **19,923** Unique Visitors
- **201,543** Page Views (5.3 on average per session)
- **5:32** Time on Site per Session

* This only includes views for all the EarthRef.org database portals, but not any of the static pages, such as workshops, who's who, etc.

Contribution Statistics

March 2007	Sept 2011	(private)	Increase *	
3,738	**3,985**	(282)	7%	Contributions
8,742	**9,878**	(373)	12%	Locations
75,488	**112,101**	(7,503)	49%	Sites
1,037	**11,780**	(9,148)	1136%	Samples
1,586	**13,283**	(8,898)	838%	Specimens
179,457	**662,782**	(14,741)	369%	Measurements

* These numbers only include only the latest versions.

Method Codes and Compilations Included

- **534** Method Codes (from 500 in March 2007)
- **GPMDB, PINT, PSVRL, SECVR, TRANS, GEOMAGIA, TAFI, SEDPI, 20D, BC02, CALS7K.2+3, Q94, SWUS**

Future Developments (1 of 2)

Web Interface

- Provide access to published compilations and allow users to make their own compilations
- Customizable web interface (e.g. user preferences such as units or which columns to view)
- Full MagIC SmartBook saves
- Real time MagIC visualizations IN BETA
- Google Maps linking IN BETA
- KML export for Google Earth and Maps

Future Developments (2 of 2)

Database

- Moving to new Linux database server 11 Oct 2011
- Moving to Oracle 11g 11 Oct 2011

Data and Data Model

- Extend data model as necessary (e.g. images, physical properties of samples analyzed)
- Systematically go through literature and add as much low-level data into MagIC database
- Add full AGU reference database to EarthRef.org
- Add cited references via Thomson Reuters Web of Knowledge (Web Services) to the reference database of EarthRef.org