

## Geomagnetic & Gravity Data available from NGDC

NGDC and the collocated World Data Center for Solid Earth Geophysics, Boulder archive many digital data files and analog data sets containing descriptions, imagery, and models of Earth's magnetic and gravity fields.

**Geomagnetism** is one of the oldest of the geophysical sciences, pre-dating William Gilbert's 1600 publication of *De Magnet.* NGDC maintains archives of geomagnetic data to further the understanding of Earth's magnetism and the Sun-Earth environment. Data at NGDC include surface, ocean, airborne and satellite measurements, as well as models of the main field and its secular change, and models of the Space-Earth environment. Data on Earth's ancient magnetic field are available from archeomagnetic and paleomagnetic measurements. A general information page and answers to Frequently Asked Questions (FAQ) page for those interested in learning more about geomagnetism. For more information, visit NGDC's Web site:

<http://www.ngdc.noaa.gov/seg/geomag/>

**Gravity** data at NGDC include land and marine surveys, grids, models, and geoids. In general, data parameters include latitude, longitude, observed gravity and elevation, Bouguer gravity anomaly (land), and free-air anomaly (ocean). In all cases, each data set contains associated documentation, including source contributor. For more information, visit NGDC's Web site:

<http://www.ngdc.noaa.gov/seg/gravity/>

US Department of Commerce  
National Oceanic & Atmospheric Administration (NOAA)  
National Environmental Satellite, Data & Information Service  
National Geophysical Data Center



David Skaggs Research Center, Boulder, Colorado, USA

Mailing Address:

National Geophysical Data Center  
325 Broadway E/GC  
Boulder, CO 80305-3328 USA  
Phone: 303-497-6826  
Fax: 303-497-6513  
TDD: 303-497-6958  
Email: [ngdc.info@noaa.gov](mailto:ngdc.info@noaa.gov)  
<http://www.ngdc.noaa.gov/>

NGDC Online Store and products:  
<http://www.ngdc.noaa.gov/products/>

Geomagnetism & Gravity ordering information:

Contact: Kathy Martin  
Phone: 303-497-6826  
Email: [ngdc.info@noaa.gov](mailto:ngdc.info@noaa.gov)

Geomagnetism & Gravity technical contact:

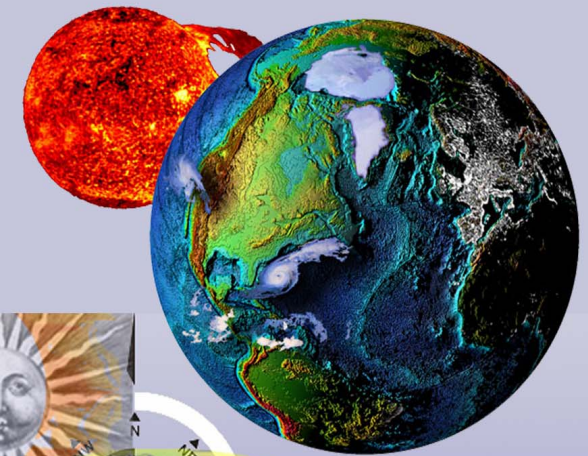
Phone: 303-497-6120  
Email: David.T.Dater

<http://www.ngdc.noaa.gov/seg/geomag/>  
<http://www.ngdc.noaa.gov/seg/gravity/>

NOAA Satellites and Information  
<http://www.nesdis.noaa.gov/>

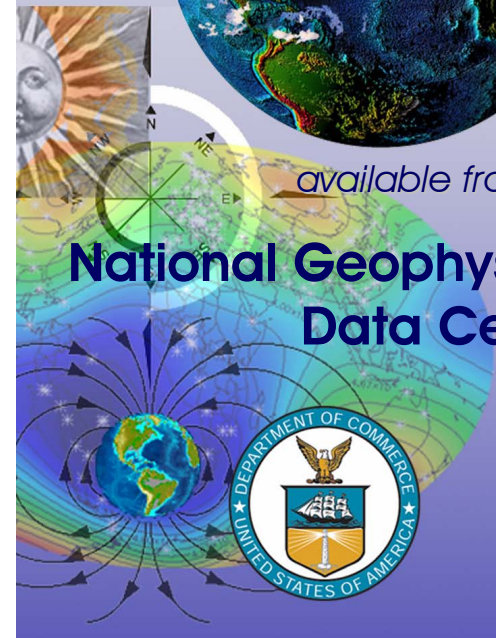


## Geomagnetic & Gravity Data



*available from the*

**National Geophysical  
Data Center**



**Geomagnetism**

The study of geomagnetism is one of the oldest of the geophysical sciences. Since before the publication of William Gilbert's *De Magnete* in 1600, people have tried to unravel the mysteries of Earth's magnetic field.

The National Geophysical Data Center maintains archives of geomagnetic data to further the understanding of Earth magnetism and the Sun-Earth environment. Data at NGDC include surface, ocean, airborne and satellite measurements, as well as models of the main field and its secular change, and models of the space - Earth environment. Data on Earth's ancient magnetic field are available from archeomagnetic and paleomagnetic studies.

**Estimated Value of Magnetic Declination**

To compute the magnetic declination, you must enter the location and date of interest.

If you are unsure about your city's latitude and longitude, look it up online! In the USA try entering your zip code in the box below or visit the U.S. Gazetteer. Outside the USA try the [Geity Thesaurus](#).

Search for a place in the USA by Zip Code:

Enter Location: (latitude 90S to 90N, longitude 180W to 180E). See [Instructions](#) for details.

Latitude:  Longitude:

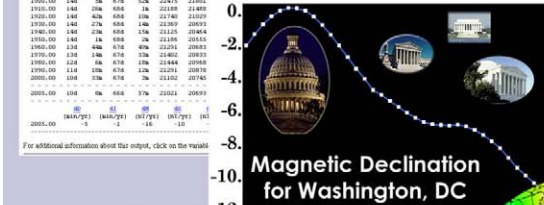
Enter Date (1900-2000): Year:  Month (1-12):  Day (1-31):

Declination = 10° 12' E changing by 0° 4' W/year

**Synthesis Results**

Row(s): 10000  
Latitude: 40.00 deg  
Longitude: -105.00 deg  
Elevation: 1.00 m  
Range of Dates: 1/1/1900 - 12/31/2004, step: 05.00

Date	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1900.00	140	36	674	326	20275	21801												
1905.00	140	36	684	318	21188	21495												
1910.00	140	36	694	310	21100	21697												
1915.00	140	37	684	302	21169	21892												
1920.00	140	38	674	294	21238	22089												
1925.00	140	38	684	286	21307	22281												
1930.00	140	39	674	278	21376	22472												
1935.00	140	39	684	270	21445	22663												
1940.00	140	40	674	262	21514	22854												
1945.00	140	40	684	254	21583	23045												
1950.00	140	41	674	246	21652	23236												
1955.00	140	41	684	238	21721	23427												
1960.00	140	42	674	230	21790	23618												
1965.00	140	42	684	222	21859	23809												
1970.00	140	43	674	214	21928	24000												
1975.00	140	43	684	206	21997	24191												
1980.00	140	44	674	198	22066	24382												
1985.00	140	44	684	190	22135	24573												
1990.00	140	45	674	182	22204	24764												
1995.00	140	45	684	174	22273	24955												
2000.00	140	46	674	166	22342	25146												
2005.00	140	46	684	158	22411	25337												



**Control Panel**

X:  Y:

Columns:  Rows:

Projection:

Color Bar:

Show political borders:

Buttons:

**Data Set**

Min:  Max:

Palette:

Plot Type:

**Date**

**Geomagnetic and Gravity data** are used for such diverse applications as navigation, resource exploration, satellite launch and orbit parameters, inertial navigation and guidance systems, and determination of Earth's substructure. Long-term data can be used to establish the past environment and to estimate the near-term conditions. These data are important for military, commercial, and public use. The National Geophysical Data Center plays a major role in global data collection, archive, model production and service to the research and broader community.

**Products and Services**

NGDC offers a wide range of products and services related to Earth's past, present, and future magnetic field as well as regional and global gravity surveys, grids, and models. Visit our Web site or contact us (see back) for more information.

- Sample Products**
- (Counter-clockwise from upper left):
  - Surface, air, marine, and space weather magnetic data access
  - Magnetic declination online
  - Magnetic field imagery
  - Gravity data (point, grid, free-air, isostatic)
  - Surface Gravity Prediction (NGS)
  - Land and marine gravity data access

<http://www.ngdc.noaa.gov/seg/geomag/>  
<http://www.ngdc.noaa.gov/seg/gravity/>  
<http://declination.ngdc.noaa.gov/>

**Land and Marine Gravity Data**

[About the Data](#) [About the Project](#) [Dictionary of Terms](#) [How to Cite](#)

In 1999, NGDC released a 2 CD-ROM set titled *Land and Marine Gravity Data - 1999 Edition*. This collection includes one CD-ROM with primarily land surveys and correlative data and a second CD-ROM containing marine surveys. Data are grouped either by general type (Land) or by region (Marine), fit the present time, all of the meta-data, browse imagery, and source information are available on-line. Only a few of the data files are available for download. More information on the Gravity CD-ROM product, including [reference information](#), is available.

NGDC's National Geodetic Survey provides an [on-line computation of estimated gravity](#) for a given location in the United States.

**Surface Gravity Prediction**

Surface gravity is predicted by interpolation based on observed values. Observed gravity data in the National Geodetic Survey's Integrated Data Base are referenced to the [International Gravity Standardization Net 1971](#), which is an absolute gravity datum.

ENTER: Latitude, Longitude and height above Mean Sea Level

The entry of mean sea level (topographic) height is NOT mandatory - the prediction of surface gravity value is still possible (frequently with diminished accuracy).

[Only enter latitude and longitude in three formats:  
 1. degrees, minutes and seconds (xxx xx.xxxx)  
 2. degrees and minutes (xxx xx.xx)  
 3. degrees (xxx.xxxxx)  
 may enter height in meters or feet:  
 1. in meters: xxx.xxxx  
 2. in feet: xxxxx.FT (MUST include FT or ft for feet)  
 Note: decimals can be keyed commensurate with the entry's precision, but are not required; MUST include one or more blanks between entry fields]

ENTER Latitude:   
 ENTER Longitude:  (positive WEST)  
 ENTER Sea level height:

When the site's sea level height is unknown DO NOT ENTER ZERO, but leave the entry field BLANK!

