Auxiliary material for

Global Map of Solid Earth Surface Heat Flow

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**Introduction**

The data files represent a global map of the solid earth surface heat flow.

The map has been produced as explained in the article.

The 10 files are different formats of the map or its components. Files 1 to 9 can be opened by a wide range of programs being ascii text files, e.g. Excel, GMT etc; while file number 10 is a shapefile (consisting of a collection of 6 component files), and can be opened with any shapefile compatible GIS program; e.g. ArcGIS and other ESRI GIS programs; other GIS programs include QGIS, etc.

***1 Data\_Table1\_Eq\_area\_Global\_heat\_flow\_tab.txt***

Presents the heat flow map on the centroids of a 2 degree equal area grid, columns are tab delimited in a text file.

1 Longitude – decimal degrees, longitude east of Greenwich

2 Latitude – decimal degrees, latitude north of Equator

3 Heat Flow (based on mean) – mW m^-2

4 Heat Flow (based on median) - mW m^-2

5 Error (estimate of error) - mW m^-2

***2 Data\_Table1\_Eq\_area\_Global\_heat\_flow.csv***

Presents the heat flow map on the centroids of a 2 degree equal area grid, columns are comma delimited.

1 Longitude – decimal degrees, longitude east of Greenwich

2 Latitude – decimal degrees, latitude north of Equator

3 Heat Flow (based on mean) – mW m^-2

4 Heat Flow (based on median) - mW m^-2

5 Error (estimate of error) - mW m^-2

***3 Data\_Table1\_Eq\_lon\_lat\_Global\_HF\_tab.txt***

Presents the heat flow map on a grid of points spaced 2 degrees in longitude and 2 degrees latitude. Columns are tab delimited in a text file.

1 Longitude – decimal degrees, longitude east of Greenwich

2 Latitude – decimal degrees, latitude north of Equator

3 Heat Flow (based on mean) – mW m^-2

4 Heat Flow (based on median) - mW m^-2

5 Error (estimate of error) - mW m^-2

***4 Data\_Table1\_Eq\_lon\_lat\_Global\_HF.csv***

Presents the heat flow map on a grid of points spaced 2 degrees in longitude and 2 degrees latitude. Columns are comma delimited.

1 Longitude – decimal degrees, longitude east of Greenwich

2 Latitude – decimal degrees, latitude north of Equator

3 Heat Flow (based on mean) – mW m^-2

4 Heat Flow (based on median) - mW m^-2

5 Error (estimate of error) - mW m^-2

***5 Data\_Table2\_Eq\_area\_Data\_only\_HF.csv***

The data-driven component of the heat flow estimate (median) derived on the 2 degree equal area grid, columns are comma delimited.

1 Longitude – decimal degrees, longitude east of Greenwich

2 Latitude – decimal degrees, latitude north of Equator

3 Heat Flow (based on median) - mW m^-2

***6 Data\_Table3\_Eq\_area\_Young\_Ocean\_only\_HF.csv***

The Young Ocean derived component of the heat flow estimate (eq 1) derived on the 2 degree equal area grid, columns are comma delimited.

1 Longitude – decimal degrees, longitude east of Greenwich

2 Latitude – decimal degrees, latitude north of Equator

3 Heat Flow - mW m^-2

***7 Data\_Table4\_Eq\_area\_Geology\_based\_HF.csv***

The Heat Flow derived assuming it correlates with Geology derived on the 2 degree equal area grid, columns are comma delimited.

1 Longitude – decimal degrees, longitude east of Greenwich

2 Latitude – decimal degrees, latitude north of Equator

3 Heat Flow (based on median) - mW m^-2

***8 Data\_Table5\_Eq\_area\_Data\_only\_detailed.csv***

The Heat Flow derived from the raw data. It is derived on the 2 degree equal area grid, but only cells with data and not in young ocean are presented. Columns are comma delimited.

1 Longitude – decimal degrees, longitude east of Greenwich

2 Latitude – decimal degrees, latitude north of Equator

3 Number of Heat Flow Union Polygons – number of Union polygons of data that contribute to the final estimate of heat flow in this 2 degree cell

4 Number of Heat Flow Points – number of heat flow points in this 2 degree cell

5 Min\_heat\_Flow – Minimum Heat Flow in the raw data in this cell - mW m^-2

6 Max\_heat\_Flow – Maximum Heat Flow in the raw data in this cell - mW m^-2

7 Median\_HF - Heat Flow (based on median of data in Unioned polygons) - mW m^-2

8 Area\_Weighted\_Mean - Heat Flow (based on mean of data in Unioned polygons) - mW m^-2

9 Unbiased\_standard\_deviation – The square root of the Unbiased Area Weighted Variance resulting from combining the Median estimate in the Unioned polygons.

**9 DataTable6\_2deg\_equal\_area\_grid\_description.txt**

1 longitude of the cell centroid– decimal degrees, longitude east of Greenwich

2 latitude of the cell centroid– decimal degrees, latitude north of Equator

3 West longitude of the cell– decimal degrees, longitude east of Greenwich

4 East longitude of the cell– decimal degrees, longitude east of Greenwich

5 Southern latitude of the cell– decimal degrees, latitude north of Equator

6 Northern latitude of the cell– decimal degrees, latitude north of Equator

***10***

***Heat\_Flow.dbf***

***Heat\_Flow.prj***

***Heat\_Flow.shp***

***Heat\_Flow.sbn***

***Heat\_Flow.sbx***

***Heat\_Flow.shx***

Are the 6 components of a Polygon ShapeFile representing the heat flow on a 2 degree equal area grid. The attribute columns

*Final\_HF\_mean* – represents the Global Heat Flow using the mean of Heat Flow values in the Unioned Geology and Grid Polygons, before combining in an area weighted manner

*Final\_HF\_median* – represents the Global Heat Flow using the median of Heat Flow values in the Unioned Geology and Grid Polygons, before combining in an area weighted manner

*Yng\_OC\_HF* – represents the Heat Flow for Young Ocean Crust – otherwise given a value of zero

*DataHFMeanArWghtd* – estimate of the heat flow only from the data where it exists, using the mean

*DataHF\_Median* – estimate of the heat flow only from the data where it exists, using the median

*GeolMeanHF* – is the estimate of heat flow based on a geology correlation using the mean

*GeolMedianHF\_Area\_weighted* – is the estimate of heat flow based on a geology correlation using the median, but the final combination from the unioned polygons to the 2 degree polygons is undertaken in an area weighted manner

*Longitude* – decimal degrees, longitude east of Greenwich

*Latitude* – decimal degrees, latitude north of Equator