

Getting Current Earthquake Data, Converting it, and Analyzing it in ArcVoyager

- For additional information see the educational activities at USGS RMMC at <http://rockyweb.cr.usgs.gov/public/outreach/activity.html>
- Visit the USGS Web site to collect data on recent earthquakes. <http://wwwneic.cr.usgs.gov/neis/bulletin/bulletin.html> Scroll down the page to see data on the most recent quakes.
- Copy the table of data on the most recent quakes. Open a spreadsheet program like EXCEL and paste the table into the program.

Updated as of Mon Oct 14 20:31:55 UTC 2002.

| DATE-(UTC)-TIME | Latitude | Longitude | Depth | Magnitude | Q | COMMENTS |
|------------------------|----------|-----------|-------|-----------|---|---------------------------|
| yyyy/mm/dd hh:mm:ss | degrees | degrees | km | | | |
| 2002/10/14 14:12:43 | 41.34N | 142.06E | 57.9 | 5.6 | A | HOKKAIDO, JAPAN REGION |
| 2002/10/13 22:18:55 | 39.20N | 106.62W | 10.0 | 2.8 | A | COLORADO |
| 2002/10/13 20:55:10 | 14.71S | 175.43W | 33.0 | 6.0 | A | SAMOA ISLANDS REGION |
| 2002/10/12 23:43:13 | 15.13N | 118.48E | 33.0 | 5.6 | A | PHILIPPINE ISLANDS REGION |
| 2002/10/12 20:09:11 | 8.26S | 71.53W | 535.9 | 6.8 | A | WESTERN BRAZIL |
| 2002/10/11 15:16:24 | 16.59S | 172.86W | 33.0 | 5.0 | A | SAMOA ISLANDS REGION |

- Delete any commas. Delete any blank lines at the top of the document. Delete the second line. (yy/mm/dd hh:mm:ss degrees degrees km)
- Delete UTC
- Make sure there are no spaces between the latitude and hemisphere or the longitude and hemisphere.
- Separate the date and time fields by adding another column to your spreadsheet.

| Date | TIME | Latitude | Longitude | Depth_km | Magnitude | Q | COMMENTS |
|----------|----------|----------|-----------|----------|-----------|---|------------------------------|
| 10/14/02 | 14:12:43 | 41.34 | 142.06 | 57.9 | 5.6 | A | HOKKAIDO JAPAN REGION |
| 10/13/02 | 22:18:55 | 39.20 | -106.62 | 10 | 2.8 | A | COLORADO |
| 10/13/02 | 20:55:10 | -14.71 | -175.43 | 33 | 6 | A | SAMOA ISLANDS REGION |
| 10/12/02 | 23:43:13 | 15.13 | 118.48 | 33 | 5.6 | A | PHILIPPINE ISLANDS REGION |
| 10/12/02 | 20:09:11 | -8.26 | -71.53 | 535.9 | 6.8 | A | WESTERN BRAZIL |
| 10/11/02 | 15:16:24 | -16.59 | -172.86 | 33 | 5 | A | SAMOA ISLANDS REGION |

- Delete the text references to hemispheres (N, S, E, W). Designate the southern and western hemispheres with a negative (-).
- Format the cells for the Time.
- Format the cells for Latitude, Longitude, and magnitude as numbers with 3 decimal places.

| Date | TIME | Latitude | Longitude | Depth_km | Magnitude | Q | COMMENTS |
|----------|----------|----------|-----------|----------|-----------|---|---------------------------|
| 10/14/02 | 14:12:43 | 41.340 | 142.060 | 57.90 | 5.60 | A | HOKKAIDO JAP REGION |
| 10/13/02 | 22:18:55 | 39.200 | -106.620 | 10.00 | 2.80 | A | COLORADO |
| 10/13/02 | 20:55:10 | -14.710 | -175.430 | 33.00 | 6.00 | A | SAMOA ISLAND REGION |
| 10/12/02 | 23:43:13 | 15.130 | 118.480 | 33.00 | 5.60 | A | PHILIPPINE ISLANDS REGION |
| 10/12/02 | 20:09:11 | -8.260 | -71.530 | 535.90 | 6.80 | A | WESTERN BRA |
| 10/11/02 | 15:16:24 | -16.590 | -172.860 | 33.00 | 5.00 | A | SAMOA ISLAND REGION |

- Highlight ONLY the cells in the table and save it as a text file (.txt). Click Yes and Yes to the EXCEL questions.
- Open ArcVoyager "Turn Me Loose". Add a world theme as a base.
- Open the table in ArcVoyager and from the project menu add a new table. Be sure to choose a text file under the drop down box of "list files as type".
- In the View use Add Event Theme to add it as a theme to your project.

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EXPLANATION OF EARTHQUAKE PARAMETERS AND PUBLICATION CRITERIA

| | |
|-----|--|
| DEP | Depth in kilometers |
| MAG | Magnitude, with method used to calculate it: |
| MI | local, the original Richter magnitude |
| Lg | mbig or Mn, local or regional magnitude for the area east of the Rocky Mountains |
| Md | duration |
| Ms | surface wave |
| Mw | Movement |
| Q | Earthquake Location Quality: A is good, B is fair, C is poor, D is bad |
| UTC | Coordinated Universal Time in the United States, to convert to your local time, find your time zone and subtract the number of hours listed. |

STANDARD TIME

Eastern - UTC - 5 hours
Central - UTC - 6 hours
Mountain - UTC - 7 hours
Pacific - UTC - 8 hours
Alaska - UTC - 9 hours
Hawaii - UTC - 10 hours

DAYLIGHT TIME

Eastern - UTC - 4 hours
Central - UTC - 5 hours
Mountain - UTC - 6 hours
Pacific - UTC - 7 hours
Alaska - UTC - 8 hours

COMMENTS

The regions shown in the comments column are from the seismic and geographic rationalization of Flinn, Engdahi, and Hill (1974), with occasional name changes, which have been given in various issues of the PDE Monthly Listing. The boundaries of these regions are defined at one-degree intervals and differ slightly from irregular political boundaries. The comment is an automatically generated region name and can be misleading for earthquakes near region boundaries.

The 3 to 5 letter codes enclosed in angle brackets refer to the organization contributing the location.