

# EARTHQUAKES AND ERUPTIONS

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This CD-ROM contains four interactive programs: EARTHQUAKES THROUGH TIME, ERUPTIONS THROUGH TIME, SEISMIC WAVES, and the SMITHSONIAN EXHIBIT VERSION. SEISMIC WAVES shows how the different types of earthquake waves propagate through the Earth and across its surface. The other three programs sequentially plot earthquakes and volcanic eruptions since 1960 on a variety of physiographic maps. Earth's tectonic plate boundaries and plate names can also be superimposed on the views.

## GETTING STARTED

Earthquakes and Eruptions is designed to operate on any PC running Windows 95/98/NT/2000/XP, (there is no Macintosh version). Insert the CD-ROM and run SETUP.EXE located in the root directory of the CD. During SETUP, the user will be prompted for FULL INSTALL or RUN FROM CD. A FULL INSTALL requires 85 megabytes of free space on the target drive. Earthquakes and Eruptions will perform more efficiently if Full Install is chosen; this is the recommended setup. If RUN FROM CD is chosen, 3 megabytes of free space are required on the target drive and the Earthquakes and Eruptions CD must be in the CD-ROM drive.

For best results, the pixel resolution of your display should be set to 800 x 600 and the color depth should be set to true color (24 or 32 bit). If the display settings are not those recommended, Earthquakes and Eruptions will alert the user and suggest the appropriate changes be made.

To change the display settings, go to "Start Menu/settings/control panel/display." Choose the "settings" tab, and change the settings to those listed above.

## NAVIGATING

### **Earthquakes Through Time, Eruptions Through Time, and Smithsonian Exhibit Version.**

From the Main Menu the user can navigate through the program by left clicking once on buttons labeled with red text.

There are two types of buttons on the EARTHQUAKES THROUGH TIME World Menu - Groups and Views. Upon selecting a Group button, ie. North America Group, a regional map will appear that contains more Groups and Views within that region. View buttons start the indicated region, and the program begins to run when the map appears. The Eruptions Through Time World Menu contains only View buttons. The Smithsonian Exhibit Version does not contain either Group or View buttons.

The control panel located at the bottom of the screen on EARTHQUAKES THROUGH TIME and ERUPTIONS THROUGH TIME views operates like most audio player controls. Play, Rewind, Fast Forward, Repeat, and Pause perform the indicated functions. The Step buttons allow the user to move through the events (earthquakes or eruptions) one at a time. The rate at which time passes in the program can be increased or decreased by changing the years/sec box. The magnitude of the largest event displayed can also be increased or decreased by changing the EQ Cutoff and/or Eruption Cutoff. If operating in EARTHQUAKES THROUGH TIME, eruptions can be added to the view by checking the Eruptions box. Likewise if operating in ERUPTIONS THROUGH TIME, earthquakes can be added to the view by checking the Earthquakes box.

The Plates button, located in the lower right corner of EARTHQUAKES THROUGH TIME and ERUPTIONS THROUGH TIME screens, displays Earth's tectonic plate boundaries and plate names.

Information buttons in each view open boxes that contain information specific to that view.

### **Seismic Waves**

The Seismic Waves World Menu contains View buttons that start the specified event. Move the slider, in the lower right screen, to increase or decrease the rate at which time passes during an event.

Event Info buttons open boxes that contain information specific to that event.

Info buttons in each of the three sections on the screen open boxes that contain information describing that section.

### **ADVANCED USERS**

The Earthquakes and Eruptions CD is designed for ease of use. Much of the advanced functionality of EARTHQUAKES THROUGH TIME, ERUPTIONS THROUGH TIME, and SEISMIC WAVES has been disabled. The following instructions are for the user who wishes to take advantage of the full power of these programs. A full installation is required to follow these instructions.

EARTHQUAKES THROUGH TIME and ERUPTIONS THROUGH TIME are essentially the same program; both were generated using the Seismic-Eruption program. They contain regionally defined views specific to earthquakes and volcanic eruptions, respectively. It is recommended that the user apply the techniques described below to the program of interest. If earthquakes are your main interest, begin in the *Seismic* folder that was placed on your hard drive during installation. Likewise, if volcanic eruptions are your main interest, begin in the *Eruption* folder. Don't be confused by the naming conventions, **Seismic.exe** is the name used for both EARTHQUAKES THROUGH TIME and ERUPTIONS THROUGH TIME in the *Seismic* and *Eruption* folders, respectively.

First enable the menu bar. Run **Seismain.exe** located in the *Seismic* or *Eruption* folder; under Preferences, select Control and check the Menu bar box. The next time that **Seismic.exe** is run the menu bar will appear. Once the menu bar is enabled, review the help file to learn what functions are available. Preferences can also be altered in the **Seismic.ini** file. In fact, there are controls in the **Seismic.ini** file that cannot be accessed any other way.

To enable the SEISMIC WAVES menu bar, run **Swm.exe** in the SW folder (the Seismic Waves Maintenance window should be blank). Under Preferences, select Control and check the Menu bar box. The next time SEISMIC WAVES (**Sw.exe**) is run the menu bar will appear.

### **PROGRAM DATA**

See the DATAINFO.RTF file for an explanation of the data contained on the Earthquakes and Eruptions CD-ROM. This information can also be found in the CD Information section accessed from the Main Menu.

**CITATION**

Please use the following when citing the Earthquakes and Eruptions CD-ROM:

Jones, A., Siebert, L., Kimberly, P., and Luhr, J. F. (2002-). Earthquakes and Eruptions: Temporal and spatial display of earthquake hypocenters, seismic-wave paths, and volcanic eruptions, v. 2.0 (CD-ROM). Smithsonian Institution, Global Volcanism Program, Digital Information Series, GVP-2.

**TECHNICAL SUPPORT**

For technical support, comments, corrections, or bugs, please contact us at <support@volcano.si.edu>.