Viewing Near Real-Time Seismograph Data from Indiana University

Teachers! Want to turn your computer into a seismograph station?

Now you can record live seismic data via the internet!
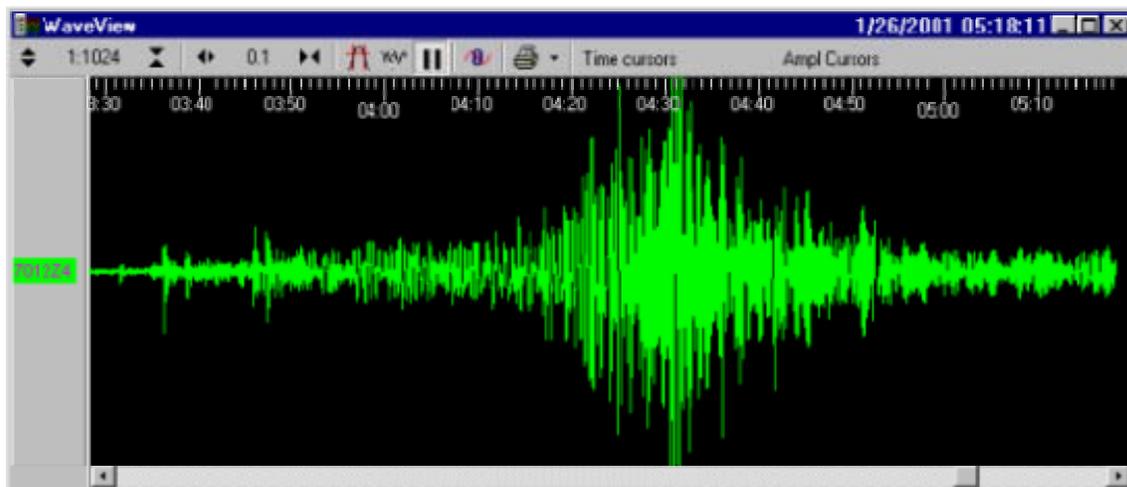
(A seismograph record of the 1/26/01 India Earthquake)

Instructions for downloading and installing software to view live seismograph data on your computer.

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As a participant in the **Indiana PEPP Seismograph Network**, you can get access to live seismic data from a state-of-the-art digital seismic instrument. **This data will allow you to:**

- view distant earthquakes from around the globe
- view small earthquakes from the New Madrid and Wabash Valley seismic zones
- view quarry and mine blasts from near your school
- observe P, S, and surface waves
- measure magnitudes from earthquake records
- learn about the deep structure of the Earth from seismic waves
- connect your science classroom with events around the world

Background

The **Princeton Earth Physics Program (or PEPP)** is a national science-outreach program that brings state-of-the art seismological research instruments into America's science classrooms. Since 1996, a network of 80 schools across the country have been operating PEPP seismograph stations, sharing their data via the internet, and incorporating seismology into their earth science and physics classrooms. There are now 25 schools around the state of Indiana and a growing number of school nation wide, who have had operating PEPP seismographs for the past several years. The schools are operating a new type of digital seismograph, manufactured by the **Guralp Co.** of Great Britain. These "broadband" seismographs permit recording of seismic waves from both distant and nearby earthquakes. And through the miracles of the internet, you can record seismic data even if you do not have access to the seismograph.

You will be using a __demo version__ of Guralp's recording software **"SCREAM"** (for **S**eismometer **C**onfiguration, **RE**al-time **A**cquisition and **M**onitoring), which allows monitoring data from a remote seismograph that is also recorded using the SCREAM software.* In this case, you will be using data from the Indiana University PEPP seismic station. Guralp offers two other pieces of software that will be useful to you in running your seismic station:

- __GCFInfo__, which allows users to observe and manipulate data that was previously recorded by SCREAM. Most importantly, it allows you to 'cut and paste' data into small files containing only data from a single earthquake that can be used for later analysis.
- __Drumplot__, which takes a day's worth of seismic data recorded by SCREAM and transforms it into a record that looks like a traditional drum recorder's record.

This guide will provide you with enough information to get started.
From there, we have a series of on-line manuals to help you with operation of SCREAM and related programs. Take a look at our website:
http://www.indiana.edu/~pepp/manuals/intro.html

Still have questions? Contact us by email at **pepp@indiana.edu**.

It will allow you to view seismic data, but will not allow you to record data onto your own hard disk.

System Requirements

- **Windows 95 or Better**
- **133mhz Pentium processor or better**
- **16MB of RAM or more**
- **640x480 resolution with 256 colors or more**
- **Connection to the Internet (modem or LAN)**

Step 1. Software Download of Scream and GCFINFO

SCREAM:
http://www.guralp.demon.co.uk/software/

GCFINFO and Drumplot:
http://www.guralp.demon.co.uk/software/winutils.htm

Step 2. Install the SCREAM! Software

Get an unzip program from www.winzip.com to unzip the scream install files.
Unzip them to any directory and double-click on the setup.exe file to run the guided setup
operation to install the SCREAM 3.0 software.

Step 3. Start up the SCREAM! Software

Go to the Start Menu, click on Programs, then click on Guralp Systems, then click on
SCREAM! 3.0 to start the program.

You Should then have a Window like this:
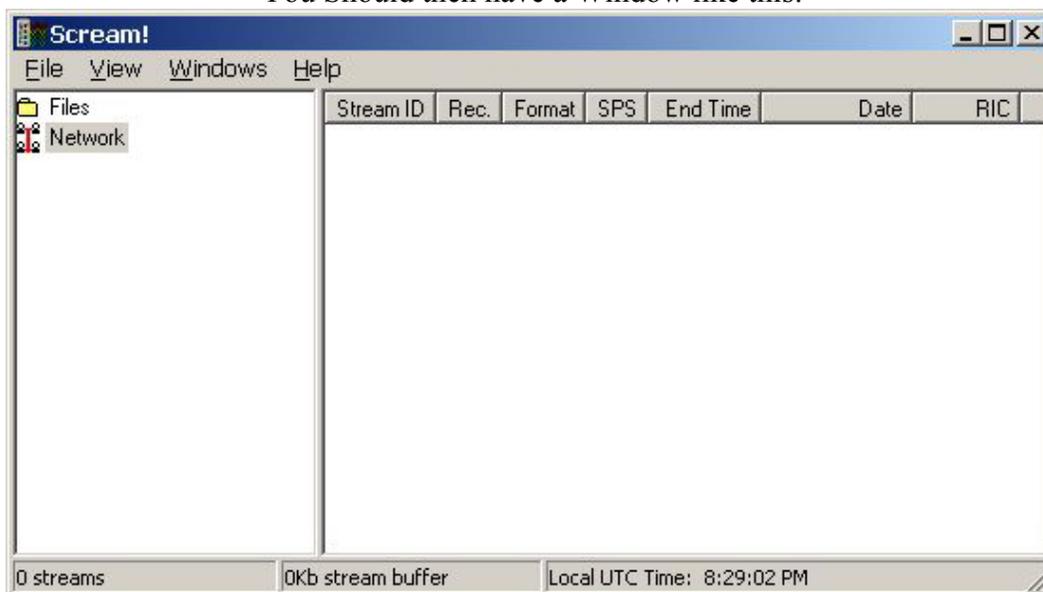
Step 4. Send Data Recieve Request

Left-Click on the Windows menu on the top bar and left-click on "Network Control" as shown below:

You will then get this window:
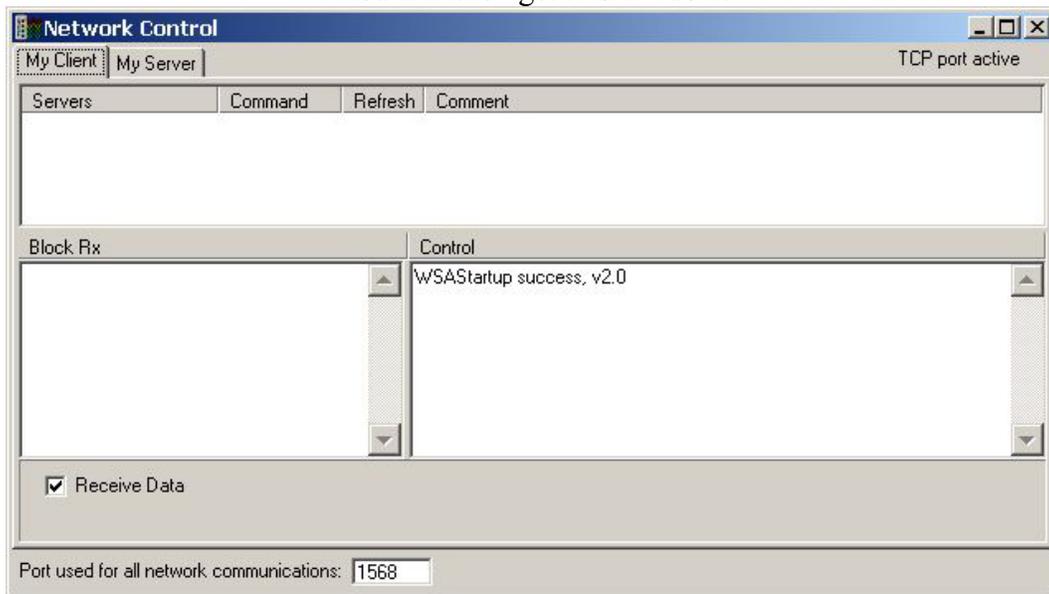
In this window (shown below), left-click the **"Receive Data"** checkbox so that it shows a checkmark. In the "Port used for all network communications" box, type in **1568**
Right-Click in the top white space and left-click the **"Add..." button** that pops up in the command window. Like this:

In this window, type **129.79.146.66:1568** as shown below:

Left-click on OK

Right-click on the server you just added and left-click on GCFPING, like this:
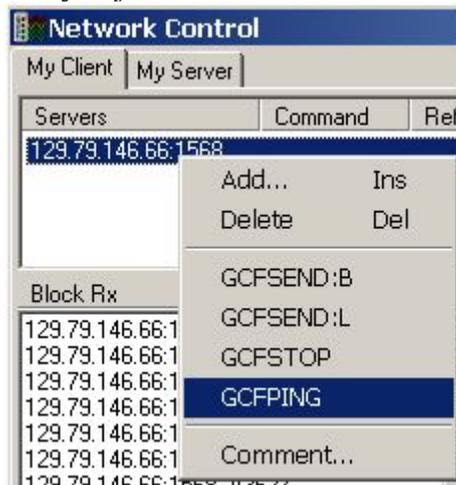
If it is successful you will get a window like this:

Then Click OK.

If the ping request times out, then either our server is currently down, or your school server or router is blocking the data from coming in on Port 1568. You will have to work with your network administrator to allow permissions through your school's security software (firewall) such that SCREAM! Data can reach the computer that you are running the SCREAM! Program on.

There is an alternate method where we can try on our end if this process does not work. Send us an email stating that you cannot receive data using this procedure and you wish to work out alternate methods if possible.

Next right-click on the server again and left-click on GCFSEND:L as shown blow:

If you see "CMD: GCFACKN from 129.79.146.66:1568" in the right pane of your Network window, you will start recieving data from us in a few seconds.

Left-click the "X" button on the top right of the window to exit the Network window and get back to the SCREAM! window:
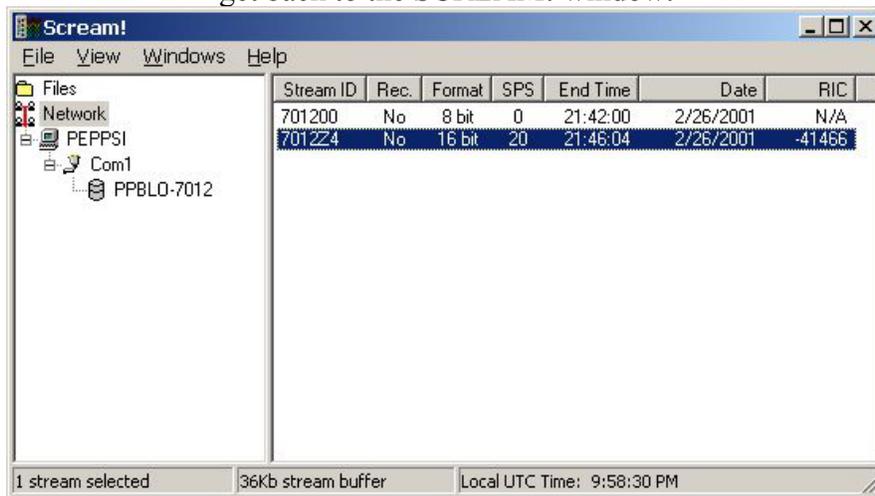
Right-click on our stream and left-click on "View" And a WaveView window will appear like this:
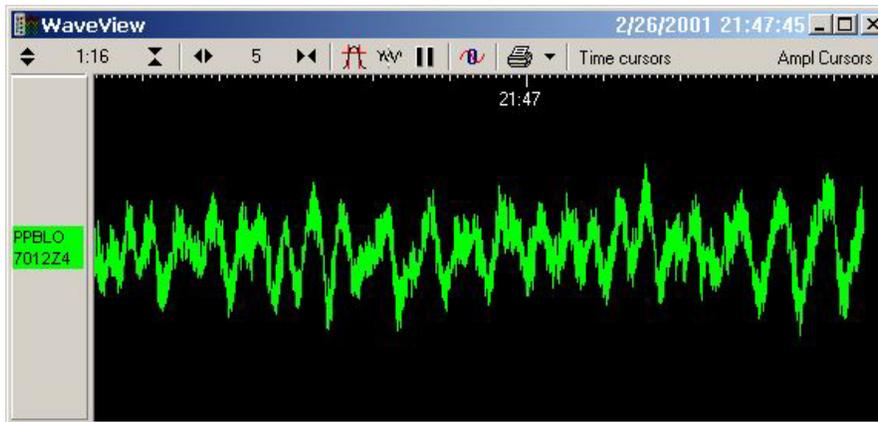
This window is our data being streamed to you, for more information on using and manipulating this data, go to:
http://www.indiana.edu/~pepp/manuals/
Then click on "Setup Instructions for Scream!"

If you wish to run Drumplot, go to:
http://www.indiana.edu/~pepp/manuals/Drumplot.html

To see an example of drumplot at one of our PEPP schools, go to:
http://www.ohusc.K12.in.us/Science/Station

Email Questions to: pepp@indiana.edu

Interested in getting your own sensor at your school?

Check the Princeton University website at:

http://lasker.princeton.edu/NewStation/map.html

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