



Seismogram Transfer Program (STP) Reference Manual

Version: 1.01
Revised: April 23, 2007

Prepared by the Southern California Earthquake Data Center
Seismological Laboratory
California Institute of Technology

Table of Contents

1	INTRODUCTION	1
2	SYSTEM REQUIREMENTS AND DOWNLOADING.....	1
3	INSTALLATION AND STARTUP OF THE COMMAND-LINE CLIENT	2
3.1	UNIX, LINUX, AND MACINTOSH	2
3.2	WINDOWS.....	2
4	USING THE COMMAND-LINE CLIENTS.....	4
4.1	STARTING THE CLIENT AND GETTING HELP	4
4.2	FINDING EVENTS	5
4.2.1	<i>Search Criteria for Events</i>	5
4.2.2	<i>Event Output</i>	6
4.2.3	<i>Events with Known IDs</i>	7
4.3	DOWNLOADING EVENT WAVEFORMS	7
4.3.1	<i>Finding Available Waveforms</i>	7
4.3.2	<i>Downloading Waveforms</i>	8
4.4	DOWNLOADING CONTINUOUS TIME-WINDOW WAVEFORMS	10
4.4.1	<i>Finding Available Waveforms</i>	10
4.4.2	<i>Downloading Waveforms</i>	10
4.5	DOWNLOADING PHASE PICKS	11
4.6	DATE FORMATS AND TIME WINDOWS	12
4.7	SAVING OUTPUT	13
4.7.1	<i>Other Ways of Saving Output</i>	13
4.7.2	<i>XML Format</i>	14
4.8	AUTOMATING STP.....	14
4.9	RUNNING EXTERNAL COMMANDS	15
4.10	OTHER STP COMMANDS.....	15
5	USING THE WEB INTERFACE	16
5.1	STARTING THE WEB INTERFACE	16
5.2	DOWNLOADING TRIGGERED WAVEFORMS	16
5.2.1	<i>Setting Options</i>	16
5.2.2	<i>Finding Events</i>	17
5.2.3	<i>Downloading Waveforms</i>	18
5.3	DOWNLOADING CONTINUOUS TIME-WINDOW WAVEFORMS.....	22
5.4	DOWNLOADING PHASE PICKS	22
5.5	PROFILES	23
6	APPENDIX A- STP HELP FILES.....	25
6.1	NEWS	25
6.2	WIN	25
6.3	WIND	26
6.4	TRIG	27
6.5	STA	27
6.6	CHAN	28
6.7	EVENT	28
6.8	ALTLOC	30
6.9	PHASE.....	30
6.10	SAC.....	32
6.11	MSEED	32
6.12	SEED	32
6.13	FLT32.....	33
6.14	INT32	33

6.15	ASCII	33
6.16	COSMOS	34
6.17	XML	35
6.18	NORM	35
6.19	GAIN	35
6.20	DATE	36
6.21	INPUT	37
6.22	OUTPUT	37
6.23	STATUS	38
6.24	VERBOSE	39
6.25	UPGRADE	39
6.26	BUGS	39
6.27	AVAIL	39
6.28	EAVAIL	40
6.29	SET	40
7	APPENDIX B – TROUBLESHOOTING	42
7.1	COMMAND-LINE STP	42
7.1.1	<i>General troubleshooting</i>	<i>42</i>
7.1.2	<i>I extracted the STP client's tar file, and I can't find the directory.</i>	<i>42</i>
7.1.3	<i>I can't compile STP.</i>	<i>42</i>
7.1.4	<i>Only 100 events are listed when I run EVENT, but I know there should be more.</i>	<i>42</i>
7.1.5	<i>I tried to download waveforms, but I got an error message about no data being available.....</i>	<i>43</i>
7.1.6	<i>I tried to download waveforms and didn't get any errors, but I can't find the files.....</i>	<i>43</i>
7.2	WEB STP	43
7.2.1	<i>Nothing happens when I click "Get data from FTP site," "View files on FTP site," or "Plot Seismograms."</i>	<i>43</i>
7.2.2	<i>I can't see the buttons for downloading or plotting seismograms.</i>	<i>43</i>

1 Introduction

STP, the Seismogram Transfer Program, was developed by the Southern California Earthquake Data Center (SCEDC) to provide the seismological community with access to the waveform and parametric data archived at the Data Center. STP is a highly innovative client-server application that uses a simple (C-language) client code to handle the client side of the user transaction. The complexity of the interface is on the server-side and this method allows the Data Center to add functionality without requiring the user to obtain a new client code. The STP interface allows users to issue commands that search the earthquake catalog, retrieve phase picks, and download waveforms. The format of the waveforms can be set by the user and includes SAC, miniSEED, dataless SEED, full SEED and COSMOS V0 and V1.

This program is available as command-line clients available at: <http://www.data.scec.org/research/downloads.html> for Unix, Linux, Macintosh and Windows platforms and a Web-based, graphical interface at: <http://www.data.scec.org/stp/stp.html>.

2 System Requirements and Downloading

The STP client is available for Unix, Linux, and Macintosh and Windows platforms. All versions of the client require Internet access. If you are behind a firewall, you may need to check your firewall documentation or talk to your system administrator to ensure that the STP client can connect to port 9999 of the SCEDC servers, stp.gps.caltech.edu, stp2.gps.caltech.edu, and stp3.gps.caltech.edu. The Unix, Linux, and Macintosh clients also require the gcc compiler and Make, which are standard on most distributions of Unix and Linux.

The SCEDC download page at: <http://www.data.scec.org/research/downloads.html> hosts all available STP clients.

The web version of STP is a Java applet located at: <http://www.data.scec.org/STP/stp.html>. Downloads and more information about Java plug-ins for your browser are available at <http://www.java.com/en/download/manual.jsp>. In addition to the Java plug-ins, your browser will also need to allow popups and automatic downloads from <http://www.data.scec.org> for the seismogram plotting and automatic download features to work. The applet works best in the Firefox browser, available at <http://www.mozilla.com/en-US/firefox/>.

3 Installation and Startup of the Command-Line Client

3.1 Unix, Linux, and Macintosh

The Unix, Linux, and Macintosh STP clients are compiled from the same source code, which can be downloaded as a tar file at:

<http://www.data.scec.org/ftp/programs/stp/stp1.4.1.tar>. This file is also linked from the SCEDC download page at <http://www.data.scec.org/research/downloads.html>.

Create a new directory and download the STP tar file into that new directory. In the following cases, the user downloaded the tar file into the directory “stp1.4.1.”

On a Unix machine, type the following commands to unpack the tar file in the stp1.4.1 directory and compile the STP source code:

```
cd stp1.4.1
tar xvf stp1.4.1.tar
make
```

On a Linux machine:

```
cd stp1.4.1
tar xvf stp1.4.1.tar
make linux_stp
```

On a Mac:

```
cd stp1.4.1
tar xvf stp1.4.1.tar
make mac_stp
```

Older releases of version 1.4.1 had a bug that caused errors when compiling with newer versions of gcc. If this is the case, download

<http://www.data.scec.org/ftp/programs/stp/stp1.4.1.fix.tar> and extract the file “editline.h.”

Overwrite the original “editline.h” with the new version and recompile STP:

```
tar xvf stp1.4.1.fix.tar
cp stp1.4.1.fix/editline.h stp1.4.1/
cd stp1.4.1
make
```

When STP compiles, a binary file named “stp” is created in the directory where it was compiled. If the file is not executable, set the permissions:

```
chmod +x stp.
```

To start the client, enter:

```
./stp
```

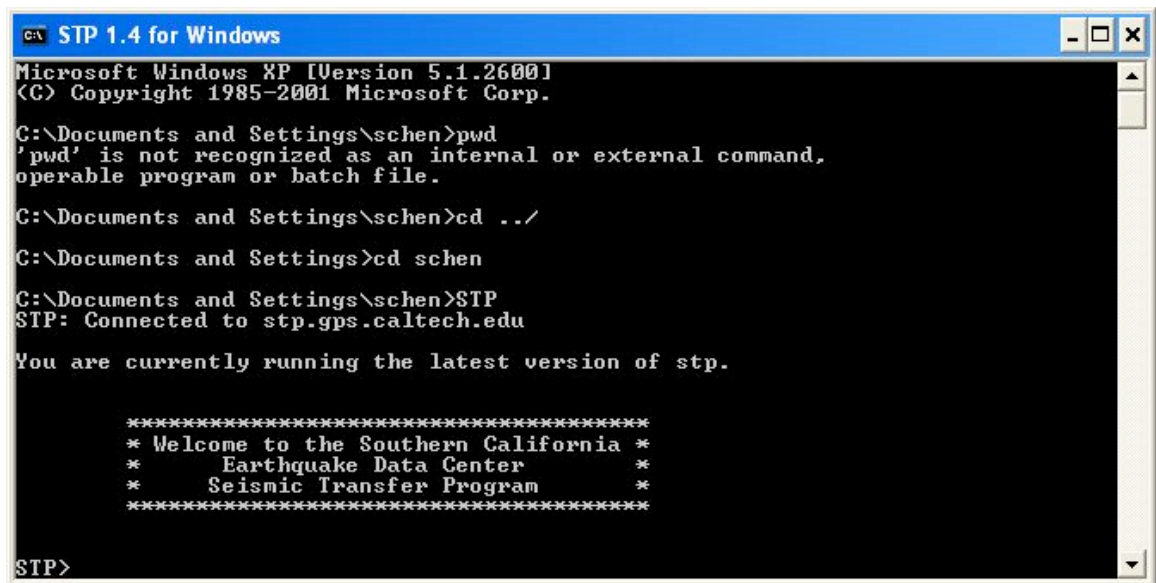
at the command prompt. To start STP from any directory, add the path of the directory containing “stp” to your PATH variable, or move “stp” to a directory that is in your PATH variable.

3.2 Windows

On the download page at <http://www.data.scec.org/research/downloads.html>, click on the download link for WinSTP and follow your browser’s instructions for saving the file

“STP.exe.” Once the file is saved, double-click its icon to open an STP command-prompt window. For easiest access, save the file STP.exe onto your desktop.

Alternatively, you can start the client from a command-prompt window. Click the Windows “Start” icon in the lower left-hand corner of your screen to open a terminal window, select “Run”, and enter “cmd” in the text field. When the command prompt opens, navigate to the directory where you saved the file STP.exe, and type “STP” to start the client (**Figure 1**).



```
C:\ STP 1.4 for Windows
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\schen>pwd
'pwd' is not recognized as an internal or external command,
operable program or batch file.

C:\Documents and Settings\schen>cd ../
C:\Documents and Settings>cd schen
C:\Documents and Settings\schen>STP
STP: Connected to stp.gps.caltech.edu

You are currently running the latest version of stp.

*****
* Welcome to the Southern California *
*   Earthquake Data Center         *
*   Seismic Transfer Program       *
*****

STP>
```

Figure 1 - Windows command prompt window.

4 Using the Command-Line Clients

4.1 Starting the Client and Getting Help

Start the STP client by typing the name of the executable – either “STP” or “stp,” at the command prompt. By default, STP will connect to the SCEDC’s main server, stp.gps.caltech.edu. If the main server is unavailable, STP will automatically connect to the other STP servers, stp2 and stp3.

You can manually choose a server by using the “-a” flag. For example:

```
stp -a stp2
```

will create an STP connection to the server stp2. The “-a” flag is useful if the connection to the main server is overloaded and/or responding quickly.

When the STP client starts, you will see the following:

```
STP: Connected to stp.gps.caltech.edu
You are currently running the latest version of stp.

*****
* Welcome to the Southern California *
*   Earthquake Data Center         *
*   Seismic Transfer Program       *
*****

STP>
```

There may be a “message of the day” between the welcome box and the STP prompt (“STP>”). Please read that message to stay current on the latest STP developments.

Commands are executed by typing them at the STP prompt and pressing the ENTER key on your keyboard. Each time you press the up arrow on your keyboard, a previously entered command, if any, will be displayed from newest to oldest after the STP prompt. You may already be familiar with this sort of feature if you use the Windows XP command prompt or the BASH or TCSH shell in Linux, Unix, or Macintosh.

STP has an interactive help feature that covers most commands. Entering:

```
HELP
```

at the STP prompt without any parameters displays a list of all available help topics.

To get help on a specific command, type “HELP” followed by the name of the command. For example:

```
HELP TRIG
```

displays the help file for the TRIG command.

STP commands are case-insensitive i.e., “help” is the same as “HELP,” which is the same as “HeLP.” For consistency all commands in this manual are capitalized.

4.2 Finding Events

4.2.1 Search Criteria for Events

One of the most common STP activities is downloading triggered waveforms, i.e., waveforms associated with events. However, before you can do this, you need the SCSN network-assigned ID numbers of the events. Use the EVENT command to find event IDs and the event’s associated parametric information.

The EVENT command requires at least one set of search criteria to limit results by magnitude, depth, location, time, or event type. If one or more criteria are omitted, STP assumes that all possible values of the omitted criteria are acceptable.

For example, suppose you are looking for events with a magnitude between 3.5 and 6. The command:

```
EVENT -mag 3.5 6
```

will provide all events in the SCEDC database with magnitude is between 3.5 and 6, regardless of the event type, depth, or location. Now suppose you want to limit the search results to events whose magnitude is between 3.5 and 6 and whose depth is between 1.5 and 10 km. Then the command becomes:

```
EVENT -mag 3.5 6 -depth 1.5 10
```

Both “-depth” and “-mag” accept two arguments, a minimum and maximum, which can be floating point numbers, like 3.5 or 3.55, or integer values like 6. All depth values are in kilometers.

The “-lat” and “-lon” flags constrain latitude and longitude ranges for the search. The values can be integers or floating-point numbers in degrees. South latitudes and west longitudes are negative; north latitudes and east longitudes are positive. For example, suppose you want to find events that occurred between 34.45° North and 36° North with any longitude. The command for this search is:

```
EVENT -lat 34.45 36
```

If you want to restrict the location of events even further, add longitude criteria:

```
EVENT -lat 34.45 36 -lon -116 -118
```

This search will find all events that occurred between 34.45° and 36° North latitude, and between 116° West and 118° West longitude. You can add the location search to the previous searches:

```
EVENT -mag 3.5 6 -depth 1.5 10 -lat 34.45 36 -lon -116 -118
```

to find events between 34.45° N, 116° W, and 36° N, 118° W, and with depths between 1.5 and 10 km and magnitudes between 3.5 and 6.

The most complicated search parameter is time. The “-t0” flag restricts search results to events that occurred within a specified time window. “-t0” accepts two arguments, a minimum and maximum. Time and date arguments can be given in a variety of formats covered in detail in section 4.6. Here are a few examples:

```
EVENT -t0 2006/2/1,00:00:00 2006/2/2,00:00:00
```

searches for events that occurred between midnight February 1, 2006, and midnight February 2, 2006.

```
EVENT -t0 2006/2/1,00:00:00 +1d
```

searches for the same events as the previous query. “+1d” represents an increment of one day.

The final type of search criteria is event type, specified by the “-type” flag, followed by an abbreviation for the desired type.

Abbreviation	Event Type
le	Local event (southern California events)
re	Regional event (northern California events)
ts	Teleseism (large event anywhere in the world)
qb	Quarry blast
nt	Nuclear blast
uk	Unknown event
sn	Sonic blast

A single query can search for more than one type of event by stringing the types together with commas.

Here are some examples that put everything together:

```
EVENT -t0 2005/12/15,00:00:00 +7d -type ts -mag 6 10
```

The above command returns events classified as teleseisms with magnitudes between 6 and 10 that occurred between December 15, 2005, and December 22, 2005.

```
EVENT -type le,re -mag 1 2.5 -t0 20051215000000 +2d -depth 1 3
```

The above query searches for local and regional events with magnitudes between 1 and 2.5 that occurred between December 15 and December 17, 2005, at depths between 1 km and 3 km. Note that the order of search criteria does not matter.

4.2.2 Event Output

When EVENT successfully finds events, the output will look like:

```
14204536 le 2005/12/16,07:15:38.420 35.9210 -117.9215 2.76 1.20 h 1.0
14204672 le 2005/12/16,20:29:11.250 33.8508 -117.4872 2.54 1.23 l 1.0
```

The above output lists two events with event IDs 14204536 and 14204672. The output fields are event ID, event type, date, latitude, longitude, depth, magnitude, magnitude type, and quality, respectively. The magnitude type is a one-letter abbreviation.

Abbreviation	Magnitude Type
b	Body-wave magnitude
l	Local magnitude
c	Coda magnitude
w	Moment magnitude
e	Energy magnitude
s	Surface-wave magnitude
n	No magnitude
h	Helicorder magnitude

To list only event IDs, include the “-s” flag in the EVENT command.

You can also have EVENT output downloaded directly to a file on your own computer. To do this, include the “-f” flag followed by a file name. For example:

```
EVENT -f events_20051215.out -type le -mag 1 2.5 -t0 20051215000000
+2d -depth 1 3
```

will store its output in a file named “events_20051215.out” on your computer in the current directory. If “events_20051215.out” does not exist, it will be created, but if it already exists, it will be overwritten. The file name you provide can include a relative or absolute directory path. All directories in the path must exist.

4.2.3 Events with Known IDs

If you already know the ID(s) of the event(s) of interest, you can display their information using the “-e” flag instead of using the usual search criteria. For example:

```
EVENT -e 14204536 14204672
```

will display the information for events 14204536 and 14204672. The “-e” flag can also be used with the “-f” flag to redirect output to a file on your computer.

4.3 Downloading Event Waveforms

4.3.1 Finding Available Waveforms

Once you have an event ID, you can download the waveforms associated with that event. To search for available waveforms for the event, use the EAVAIL command with the event ID. For example:

```
EAVAIL 10223377
```

displays the originating network, station, channel, and location code of each waveform available for the event with ID 10223377. Each waveform’s network, station, and channel information are separated by periods, e.g., AZ.BZN.HHE, CI.BBS.HHZ, etc.

The “-l” flag provides more detailed information about the available waveforms. The command:

```
EAVAIL -l 10223377
```

displays output that includes:

```

AZ  BZN  HHE  --  T  T  2006/12/20,21:28:21.968      1.07m
AZ  BZN  HHN  --  T  T  2006/12/20,21:28:22.968      1.00m
AZ  BZN  HHZ  --  T  T  2006/12/20,21:28:19.968      1.07m
AZ  CRY  HHE  --  T  T  2006/12/20,21:28:23.080      0.99m
AZ  CRY  HHN  --  T  T  2006/12/20,21:28:23.060      1.00m
AZ  CRY  HHZ  --  T  T  2006/12/20,21:28:23.060      0.99m
AZ  CRY  HLE  --  T  T  2006/12/20,21:28:21.000      1.06m
[etc.]

```

Each line displays information about one waveform. The columns are network, station, SEED channel, and location code, the type of waveform, ('T' for triggered or 'C' for continuous), archive status ('A' for permanent or 'T' for temporary), the starting date/time and the length of time the waveform covers. An archive status of 'T' means that the waveform has not yet been moved to its permanent archival location. The unit of time is "m" for minutes or "s" for seconds.

EAVAIL can be restricted to only display waveforms originating from a certain network, station, channel, or non-default location code. For example:

```
EAVAIL -net CI 10223377
```

lists waveforms associated with event 10223377 that came from the CI network.

```
EAVAIL -sta PASC -loc 10 10223377
```

lists waveforms for event 10223377 from station PASC and any channel of PASC with a location code of "10," if such waveforms exist.

```
EAVAIL -net CI -sta PASC -loc 10 -chan HHE 10223377
```

lists waveforms for event 10223377 that came from the HHE channel, with location code 10, of station PASC of network CI.

EAVAIL and similar commands accept the wildcard characters '%' and '_' in the network, station, and channel parameters. The underscore ('_') matches any single letter, and the percent sign ('%') matches any sequence of letters. For example:

```
EAVAIL -net CI -sta PASC -chan HH_ -loc 10 10223377
```

lists waveforms from any channel of station PASC, network CI, location code "10," whose SEED channel code is "HH" followed by any single letter. Hence, "HHE," "HHN," and "HHZ" will be searched. If the command is:

```
EAVAIL -net CI -sta PASC -chan H% -loc 10 10223377
```

then any channel with location code "10" from station PASC, network CI, that begins with a "H" i.e., HHE, HHN, HHZ, HLE, HLN, HLZ, HDI, HDO will match the query.

4.3.2 Downloading Waveforms

The TRIG command downloads triggered waveform files directly onto your computer. TRIG followed by an event ID will download all waveforms associated with an event. TRIG can be restricted to only retrieve waveforms that come from a particular network,

station, channel, or location code. The parameters for these restrictions are the same as those used by the EAVAIL command.

You can also restrict waveforms by the distance between the originating station and the event. The maximum distance is specified as a value in kilometers preceded by the “-radius” flag.

TRIG examples:

```
TRIG -net CI -sta PAS -chan B% 14204536
```

downloads waveforms for event 14204536 that come from any “B_” channel of station PAS in the CI network.

```
TRIG -radius 100 14204536
```

downloads all waveforms for event 14204536 that originate from stations within 100 km of the event.

The TRIG command downloads waveform files into a directory that will be created if it doesn’t already exist. The name of this new directory is the event ID. A summary file containing the event’s parametric information is stored in a file in this directory named with the format “eventid.evnt.” The format of the waveform file names is “eventid.net.station.channel.locationcode.extension.” If the location code is the default double blanks, the “locationcode” field will not exist. For example, waveforms for event 14204536 from network CI, station PAS, channel BHZ, location code “--” would be named “14204536.CI.PAS.BHZ.sac” and be stored in directory “14204536.” All directories are relative to the directory where STP is running.

The extension of a waveform file depends on the selected format. The default format is SAC, which uses the extension “sac.” Formats available are miniSEED, SEED, ASCII, COSMOS, 32-bit integer, or 32-bit float. Change the download format by typing the desired format at the STP prompt. You can check your session’s formats with the ‘STATUS’ command. For example:

```
STP> MSEED                                <-- user typed “mseed” as the desired format
STP> STATUS                               <-- user typed “status” to confirm change of format
Client Status:
  Verbose = 0
  Nline   = 24
  Output  = off
  Server  = stp
  Address = stp.gps.caltech.edu
  Port    = 9999
Server Status:
  Wave Format = MSEED                      <-- confirmation that format changed
  Event/Phase Format = Normal
  Gain       = OFF
  Fill       = 0
  Byte Swap  = 1
  Nevntmax   = 100
```

Command	Format	Extension
MSEED	miniSEED	mseed
SEED	Full SEED format	seed
ASCII	ASCII	ascii
V0	COSMOS-V0	v0
V1	COSMOS-V1	v1
SAC	SAC (default)	sac
INT32	32-bit integer	int32
FLT32	32-bit IEEE floating point	flt32

4.4 Downloading Continuous Time-Window Waveforms

4.4.1 Finding Available Waveforms

The SCEDC archives low sample-rate channels such as B* (Broadband [20 or 40 Hz]), L* (Long period [1 Hz]) and V* (Very long period [0.1 Hz]) continuously. These waveforms are archived regardless of whether or not events occurred during the time window covered by each waveform. They are stored in a separate archive from the triggered waveforms and are accessed through a separate set of commands.

The AVAIL command lists the availability of continuous waveforms by time, since they are not identified by event IDs. AVAIL accepts the “-net,” “-sta,” “-chan,” and “-loc” search criteria. AVAIL also accepts single times and time windows without a preceding “-t0” flag. If only one time is provided, the results will be waveforms whose time windows include the provided time and meet all of the other search criteria. If a time window is provided, then the results will include any waveform that includes any time within the time window and meets the other criteria. Like EAVAIL, AVAIL also accepts the “-l” flag to provide longer, detailed listings.

An AVAIL example:

```
AVAIL -l -net CI -sta PAS -chan BH% 2006/1/1,00:00:00 +1d
```

lists waveforms from the BH channels of station PAS in the CI network that include times between January 1, 2006, and January 2, 2006. The output looks like:

```
CI PAS BHZ -- C A 2005/12/31,22:59:41.073 60.53m
CI PAS BHE -- C A 2005/12/31,22:59:51.273 60.37m
CI PAS BHN -- C A 2005/12/31,22:59:59.073 60.24m
CI PAS BHZ -- C A 2006/01/01,00:59:44.273 60.33m
CI PAS BHE -- C A 2006/01/01,00:59:58.073 60.11m
[...]
```

The output format is the same as EAVAIL. Note that the value of the waveform type is now “C” for “continuous.”

4.4.2 Downloading Waveforms

The WIN and WIND commands are both used for downloading continuous time-window waveforms. They also have options for downloading triggered waveforms but do not accept event IDs as search criteria.

WIN can search by network, station, channel, and time window. All four parameters must be provided in this order. Network, station, and channel names may contain wildcards, “%” for any sequence of characters and “_” for any one character. Optionally, WIN accepts the “-t” flag to search the triggered archive for waveforms that meet the search criteria or the “-a” flag to search both triggered and continuous archives. If provided, these optional flags must precede the search criteria. If no flags are provided, WIN searches only the continuous archives by default. WIN will download data for all location codes belonging to matching channels but does not accept location code searches. If you need to restrict your searches by location code, use the WIND command. Other than the additional search parameter, WIND is the same as WIN.

WIND follows the more standard format used by the triggered commands. Like TRIG, WIND accepts network, station, channel, and non-default location code as search criteria in any order. WIND also accepts a time window using the standard STP date format.

Examples of WIN and WIND:

```
WIND CI PAS BHZ % 2006/2/5,08:30:00.00 +1d
```

downloads continuous waveforms from between 8:30am UTC on February 5, 2006, to 8:30am UTC on February 6, 2006, that come from channels beginning with “BH” of station PAS in the CI network. All location codes are acceptable.

```
WIN CI PAS BH% 2006/2/5,08:30:00 +1d
```

is the equivalent of the previous example.

```
WIN -t CI PAS BH_ 2006/2/4,08:30:00 +1d
```

downloads triggered waveforms with the same search criteria.

```
WIND CI PASC BHZ 10 2007/4/1,08:30:00.00 +1d
```

downloads continuous waveforms from CI.PASC.BHZ, with location code 10.

Both WIN and WIND download waveform files into the current STP directory on your computer. File names follow the format “timestamp.network.station.channel. location-code.extension.” If the location code is two blanks (which is the default location code and currently applies to most channels), it will be ignored and the channel will be followed directly by the extension. The default extension is “sac” for SAC format. See section 4.3.2 for information on formats.

4.5 Downloading Phase Picks

PHASE is used for downloading phase picks for events that meet the search criteria. Like the EVENT command, PHASE accepts magnitude, time window, latitude, longitude, depth, and event type to search for matching events. PHASE also accepts the “-e” flag for specifying events by ID. Instead of only displaying event location information as EVENT does, PHASE displays the information for each matching event followed by its phase picks. The output of PHASE can be redirected to a file on your computer by using the “-f” flag. When “-f” is invoked, only the event information is appears on your screen, but the phase picks are printed to the file.

PHASE examples:

```
PHASE -e 10167485 10167513
```

lists event information and phase picks two events, 10167485 and 10167513.

```
PHASE -f 10167485.phase -e 10167485 10167513
```

downloads event information and phase picks for the same two events into a file on your computer, located in your current directory, named “10167485.phase.” In this example, the “-f” flag and its parameter must precede the “-e” flag. When STP detects “-e,” it interprets everything following the flag as possible event IDs.

```
PHASE -t0 2006/2/1,05:00:00 +2h -mag 1 2.5 -depth 3 4
```

lists event information and phase picks for events with magnitude between 1 and 2.5 at a depth between 3 and 4 km that occurred between 5:00AM UTC and 7:00 AM UTC on February 1, 2006.

```
PHASE -t0 2006/2/1,05:00:00 +2h -mag 1 2.5 -depth 3 4 -f phases.txt
```

stores the event information and phase picks from the previous example in a file named “phases.txt” in the working directory of your computer.

The output for each event begins with a line containing event location information. Each subsequent line lists the phase picks for one channel with the following fields: network, station, channel, two-digit location code, latitude, longitude, elevation, phase, first-motion, signal onset quality, pick quality, epicentral distance, and time after origin time. An example of phase output is:

```
10167485 1e 2006/02/01,06:39:26.210 36.0207 -117.7710 1.91 0.95 1 1.0
CI WCS EHZ -- 36.0270 -117.7676 1135.0 P d. i 1.0 0.77 0.337
CI WCS EHZ -- 36.0270 -117.7676 1135.0 P d. w 1.0 0.77 0.370
CI JRC2 HHZ -- 35.9825 -117.8089 1469.0 P c. i 1.0 5.44 1.072
[...]
```

4.6 Date Formats and Time Windows

The previous sections included numerous examples of time windows consisting of a start time and either an end time or an increment. Most of the dates were written in the format of “year/month/day,hour:minute:second.” This is the date format that the author finds most intuitive, but several other formats are supported. All dates are in Universal Time (UTC).

Year/month/day,hour:minute:second

The format “yyyy/mm/dd,hh:mm:ss” has been used throughout the tutorial. The number of seconds can be a floating-point number. The month and day do not need to be zero-padded if they are less than 10.

Year,month,day,hour:minute:second

This format is the same as the previous, except that the forward slashes, ‘/’, are replaced by commas. An example is “2006,2,1,20:35:50.105.”

Seconds after midnight Universal Time on January 1, 1970

The seconds after midnight Universal Time on January 1, 1970 are followed by a lower-case 'u'. Examples are "1144792961u" and "1144792961.225u." Note that floating-point numbers are acceptable.

Decimal-encoded string

Numerical representations of the year, month, day, hour, minute, and second are compressed into one numerical string with no punctuation other than an optional decimal point if the number of seconds is a floating point number. Examples are "20060201203550.105" (20:35:50.105 on February 1, 2006) and "20041211050000" (5:00:00 on December 11, 2004). If the month, day, hour, minute, or second is a number less than 10, then the number must be padded with a zero to form two digits. For example, February is month 2, but it is written as "02."

Ordinal dates

Instead of dividing the date into a month and a day of the month, an ordinal date is the number of days since the beginning of the year. The first ordinal date format used by STP is "year/day,hour:minute:seconds" e.g., "2006/101, 13:20:25.20" The second format is "year,day,hour:minute:seconds" e.g., "2006,101,13:20:25.20." In 2006 the ordinal date "101" is April 11.

When a time window is required, both the start and end times can be given as increments. STP accepts increments in days, hours, minutes, or seconds. Start time increments begin with a minus sign ('-') and indicate an increment before the present time. End time increments begin with a plus sign ('+') and indicate an increment after the start time. The sign is followed by a number and then a letter specifying units ('d', 'h', 'm', 's').

Time Window	Meaning
-8h +8h	From eight hours before the present time to the present time
2006/2/5,00:00:00 +2d	From midnight, February 5, 2006, to midnight, February 7, 2006 (two-day increment)
2006/2/5,11:38:50.25 2006/2/6,8:03:20	From 11:38:50.25, February 5, 2006 to 8:03:20, February 6, 2006

4.7 Saving Output

4.7.1 Other Ways of Saving Output

Some STP commands display output on the terminal but do not accept the "-f" flag. You can still save their output by using the OUTPUT command to specify a file. OUTPUT accepts one parameter, either a file name or the word "OFF," which turns off output mode. The file name can include a directory path. If no directory path is included, the file is created in the directory from which you are running STP. Output from subsequent commands is appended to the output file. Be careful of the file name you choose. If the file already exists when you turn on OUTPUT mode, it will be overwritten.

The following sequence of commands:

```
!mkdir stpdata
```

```

OUTPUT stpdata/stalist.txt
STA -l
OUTPUT stpdata/ci_stalist.txt
STA -l -net CI
OUTPUT off

```

creates a station list in the file stalist.txt in the newly created directory “stpdata.” The second OUTPUT call switches the output file to “stpdata/ci_stalist.txt.” Note the use of an external command, “mkdir,” to create the “stpdata” directory. Also note that if a directory path is included in an OUTPUT call, the directories must already exist. For more information on the STA command, see its help section in Appendix A or enter “HELP STA” in STP.

4.7.2 XML Format

In the previous sections we’ve discussed saving EVENT and PHASE output in a file on your computer. Normally, this file contains flat text. You also have the option of saving these files as XML. The SCEDC has an XML schema available at <http://www.data.scec.org/xml/event.xsd>. Documentation for this schema is located at <http://www.data.scec.org/xml>.

As mentioned earlier, the PHASE and EVENT commands accept the “-f” flag for specifying an output file. To put the output in XML format, enter the command “XML” before running PHASE or EVENT. If the “-f” flag is included, the XML output will be saved in the file you specify. If the “-f” flag is not included, the output will be saved in a file named with the format “phases_eventid.xml” for phase picks or “eventid.xml” for EVENT output. The event ID in the file name is always the first event that appears in the output. To turn off XML mode, type the NORM command.

The following sequence of commands:

```

XML
PHASE -t0 2006/4/1,00:00:00 +12h -f phases.xml

```

stores phase picks for events that occurred in a twelve-hour time window beginning from midnight on April 1, 2006, in XML format in a file named “phases.xml.” If you then enter:

```

PHASE -t0 2006/4/1,00:00:00 +12h

```

in the same STP session, the phase picks will be stored in a file named “phases_14219828.xml.” The event ID in the file name is “14219828” because event 14219828 is the first event that fulfilled the search criteria. Now, still in the same session, enter:

```

NORM
PHASE -t0 2006/4/1,00:00:00 +12h

```

This time the phase picks will appear on the terminal in regular format because the NORM command returned the event/phase format to the default STP output.

4.8 Automating STP

The INPUT command, abbreviated as IN, tells STP to run the commands listed in a file stored on your computer. This feature allows the user to generate a sequence of STP

commands from her own scripts and then run the commands by typing only one line. The format of the INPUT command is:

```
INPUT filename
or
IN filename.
```

“filename” should be the path to a file on your computer that contains a sequence of STP commands, listed one on each line. STP will run these commands sequentially, displaying the output as if the user had entered the commands manually at the STP prompt.

As an example of the INPUT command’s applications, suppose you want to download waveforms from station BFS in network CI for all local events with magnitude between 1 and 4 that occurred between 34 degrees North and 35 degrees North and -119 degrees West and -117 degrees West within one week after March 24, 2006. The command:

```
EVENT -s -t0 2006/3/24,00:00:00 +7d -mag 1 4 -type le -lat 34 35 -lon
-119 -117 -f events.txt
```

saves the event IDs in the file “events.txt.” You can use your own scripts to construct a file containing commands to download the waveforms you want for each event ID in events.txt. The contents of the resulting file may contain:

```
TRIG -net CI -sta BFS 14218492
TRIG -net CI -sta BFS 14218564
TRIG -net CI -sta BFS 14218784
```

Let’s say the file is named “download_waveforms.” In the STP client enter

```
IN download_waveforms
```

and STP will run each command listed in “download_waveforms.”

4.9 Running External Commands

Sometimes you may need to run non-STP commands while using STP. Typing an exclamation point (!) followed by a non-STP command will run that command and display its output as if you had run it outside STP. Suppose you are running STP and forgot the name of your current directory. Unix’s “pwd” command will display the name of the current directory, but you don’t want to exit STP or open a new window. At the STP prompt type:

```
!pwd
```

and the name of the current directory will be displayed as if you had entered “pwd” on the regular command line. Once the command is done, you can continue using STP without interruption.

4.10 Other STP Commands

This section has covered the most important, but not all, functions of the command-line STP client. Other commands are documented in STP’s interactive help feature, accessible through the HELP command. The contents of STP’s help files are also listed in Appendix A of this document.

5 Using the Web Interface

5.1 Starting the Web Interface

The web version of STP is a Java applet located at <http://www.data.scec.org/STP/stp.html>. The STP applet can search for event information, download triggered and continuous waveforms, plot SAC-format waveforms, and download phase picks.

To begin a new STP session, enter a login name. This login name will be the name of the directory on the SCEDC's server where your downloaded files will be stored. It will also be used to store your user profiles if you choose to use the profile feature.

Once you log in, your browser loads the applet (**Figure 2**). The top of the applet includes a number of fields where you can set modes and waveform output formats. The box labeled "Message Window" will display status and error messages as they occur.

The screenshot shows the STP applet interface. At the top, there's a section titled "Choose type of data to retrieve" with three radio buttons: "Time Window", "Trigger Event" (which is selected), and "Phase". Below this, there's a "Data Format" dropdown menu set to "SAC". To the right of the "Data Format" dropdown is a "Help" button. Below the "Data Format" dropdown are four checkboxes: "Swap Byte Order", "Correct for Station Gain", "Show Stations/Channels in profile only", and "Plot Data (SAC format only)" (which is checked). To the right of these options is a "Message Window" box displaying the text: "Profile: s.chen/myprofile.prof" and "Message Window Profile s.chen/myprofile.prof loaded." Below the "Message Window" box is a horizontal separator line. Below the separator line is a "Search For Events" button. Below the "Search For Events" button is an "Event ID:" label followed by a large text input field and a "Clear" button. Below the "Event ID:" input field are two buttons: "Stations" and "Channels", each followed by a percentage symbol (%).

Figure 2 - STP applet in triggered mode.

5.1 Downloading Triggered Waveforms

5.1.1 Setting Options

The row of radio buttons at the top of the applet (**Figure 2**) allow you to switch modes, depending on what kind of data you want to download. "Triggered Event" mode, which is selected by default, must be selected if you want to download event waveforms.

Once "Triggered Event" is selected, you can select options for the waveforms you download. You can choose to automatically display a graphical plot your waveforms by selecting "Plot Data (SAC format only)" – make sure that the "Data Format" is SAC if you select this option.

5.1.2 Finding Events

Before you can download triggered waveforms, you need event IDs. If you already know the event IDs, enter them in the event ID textbox. Multiple IDs should be separated with spaces.

If you do not know the event IDs you need, you can search for them by clicking “Search For Events.” To set a time window for your search, click “Start Time” to open a panel. Web STP supports time window searches by an increment such as the last two hours or the last seven days, or by specific UTC times. Click the radio button next to the method you prefer, and fill in the fields. Once you are finished, your search criteria will be saved even if you click the “Close” button. In the example in **Figure 3**, we are using the second method to search for events that occurred between 17:06:23 UTC on February 1, 2006, and 19:06:23 UTC on February 5, 2006.

Next, enter additional search criteria by completing the remainder of the event search panel. If you want to see more or fewer than 100 events in the search results, modify the value in the “Maximum # events” field. When you are done entering search criteria, click “Search.” **Figure 3** illustrates a search for local events with a magnitude between 1 and 4 that occurred between 17:06:23 UTC on February 1, 2006, and 19:06:23 UTC on February 5, 2006. **Figure 4** shows the results.

Search For Events

Start Time

☐ Last 2 Hour(s)

☒ Earliest t0: 2006 Feb 1 17 : 06 : 23

Latest t0:

☐ UTC 2006 Feb 5 19 : 06 : 23

☐ Increment 1 Second(s)

Close

☒ Magnitude 1 4.0 Maximum # events: 100

☐ Latitude 33.0 38.0

☐ Longitude -121.0 -114.0

☐ Depth 0.0 10.0

☒ Type le

Search

Figure 3 - Search panel

Start Time: 2/1/2006 17:06:23 - 2/5/2006 19:06:23

☒ Magnitude: 1 to 4
☐ Latitude: 33.0 to 38.0
☐ Longitude: -121.0 to -114.0
☐ Depth: 0.0 to 10.0

Maximum # events: 100

☒ Type: le

Search

Event ID	Type	TO	Lat	Long	Depth	Mag	Mag Type
10167593	le	2006/02/01,17:20:44.000	35.5238	-118.4532	8.48	1.28	1 0.8
10167605	le	2006/02/01,18:35:15.800	35.4357	-118.7622	3.19	1.55	1 1.0
10167613	le	2006/02/01,18:52:50.970	34.8285	-118.9848	16.68	1.39	1 1.0
10167625	le	2006/02/01,20:54:33.820	33.0572	-116.3862	13.38	1.32	1 1.0
10167629	le	2006/02/01,20:58:08.530	35.6198	-117.5850	8.23	2.25	1 1.0
12229159	le	2006/02/01,20:58:18.910	35.6183	-117.5945	10.57	2.21	1 0.8
10167653	le	2006/02/02,00:42:10.100	34.2787	-117.0432	4.26	1.73	1 1.0
10167657	le	2006/02/02,01:35:26.700	35.0353	-119.0687	14.93	1.66	1 1.0
10167661	le	2006/02/02,07:15:36.320	33.5052	-116.4655	6.26	2.18	1 1.0
10167665	le	2006/02/02,07:49:16.520	33.1280	-116.3052	7.29	1.04	1 0.5
10167673	le	2006/02/02,08:08:11.670	35.1253	-117.5537	2.30	1.37	1 1.0
10167677	le	2006/02/02,08:08:13.300	36.0793	-117.8435	2.83	1.58	1 1.0
10167681	le	2006/02/02,08:48:05.540	33.5142	-116.4487	8.19	1.17	1 1.0

Close Search Panel Add Event(s) Add All Events Clear Selections

Event ID: 10167593 10167605 Clear

Figure 4 - Search results.

5.1.3 Downloading Waveforms

Once you have a list of events, you can specify which events' waveforms you want to download. If you want all the events that were found, just click on "Add All Events." If you only want some of the results, click on each desired event in the list and then click on "Add Event(s)." As shown in **Figure 4**, the selected event IDs will appear in the "Event ID" text box.

From this list of event IDs, you can narrow down your search by network, station, and channel. Click on the "Stations" button to expand the station panel. A list of all stations that can provide waveforms for your selected events will appear in the white box beneath the search fields (**Figure 5**). Each listing is formatted as "network.station." To select specific stations, check the "Station" option and click the checkboxes of the station names you want. You can also choose to download waveforms from all stations in a specific network by selecting the appropriate option and choosing a network from dropdown menu. If you want waveforms from all stations in all available networks, select "All Stations." After you have selected stations, you can safely click "Close" to close the station panel and save browser space.

Figure 5 - Station panel.

Next, select channels by clicking on the “Channels” button (**Figure 6**). If you want all channels from the stations you selected in the station panel, select “All Channels.” If you want only channels that fit a certain pattern, select “All Channels Matching” and select the pattern from the dropdown menu. The underscores in the patterns are wildcards that can represent any character. For example, the pattern “B__” matches channel names that begin with a ‘B’ followed by any two characters, such as “BHZ,” “BHE,” “BHN,” “BL1,” “BL2,” or “BL3.” The pattern “BH_” matches “BHE,” “BHZ,” or “BHN.” Alternatively, you can select specific channels by selecting “Channel” and selecting channels from the list. The desired channel names will automatically appear in the text field.

Stations: CI.LRL CI.ISA CI.GRA CI.FIG

Channels

Select Channel(s) of Interest Update Close

☐ All Channels

☒ All channels matching: BH

☐ Channels from Profile

☐ Channel:

<input checked="" type="checkbox"/> BHE	<input checked="" type="checkbox"/> BHN	<input checked="" type="checkbox"/> BHZ	<input type="checkbox"/> EHZ	<input type="checkbox"/> HHE	<input type="checkbox"/> HHN	<input type="checkbox"/> HHZ
<input type="checkbox"/> HLE	<input type="checkbox"/> HLN	<input type="checkbox"/> HLZ	<input type="checkbox"/> SHZ			

Put Data on FTP site View files on FTP site Get Data from FTP site Plot seismograms

Load Profile Store Profile

Figure 6 - Channel panel.

Now you are ready to download waveforms. First, make sure that you have selected the appropriate options at the top of the applet (**Figure 2**). Next, click on “Put data on FTP site”. The waveforms you want will be uploaded into your directory on our server. If you selected “Plot waveforms” at the top of the applet, a graphical plot of your waveforms will automatically appear in a separate window (**Figure 7**). Otherwise, you can still plot them by clicking the “Plot seismograms” button at the bottom of the applet. A window will open that prompts you to select which waveforms you want to plot (**Figure 8**). Once you make your selection, click on “Plot Seismograms” at the bottom of the window to display the plots. The seismogram-plotting package is available as a stand-alone application from <http://alomax.free.fr/seisgram/SeisGram2K.html>. The web version does not allow you to save plots, but the stand-alone version has this capability.

Waveforms can be downloaded onto your computer through one of several ways. Clicking on “View files on FTP site” will open your directory in a separate browser window. The name of this directory is the same as your login name. Each event has its own subdirectory identified by event ID. Each event directory will contain the waveform files, which are named in the format “eventid.net.station.channel.extension,” where “extension” depends on the format you chose, and an information file named in the format “eventid.evnt.” The “evnt” file contains the same information about the event that appeared in the search results in **Figure 4**.

You can download individual files by left-clicking on their names or by right-clicking on their names and selecting “Save As,” depending on your browser. Clicking on “Get Data from FTP Site” in the STP applet will compress all the files in your directory into a tar archive and initiate an automatic download.

You can also access your files by directly navigating to your directory at <http://www.data.scec.org/ftp/stpdata/user.name>, replacing “user.name” with your login name. STP files are deleted nightly, so don’t delay in downloading them.

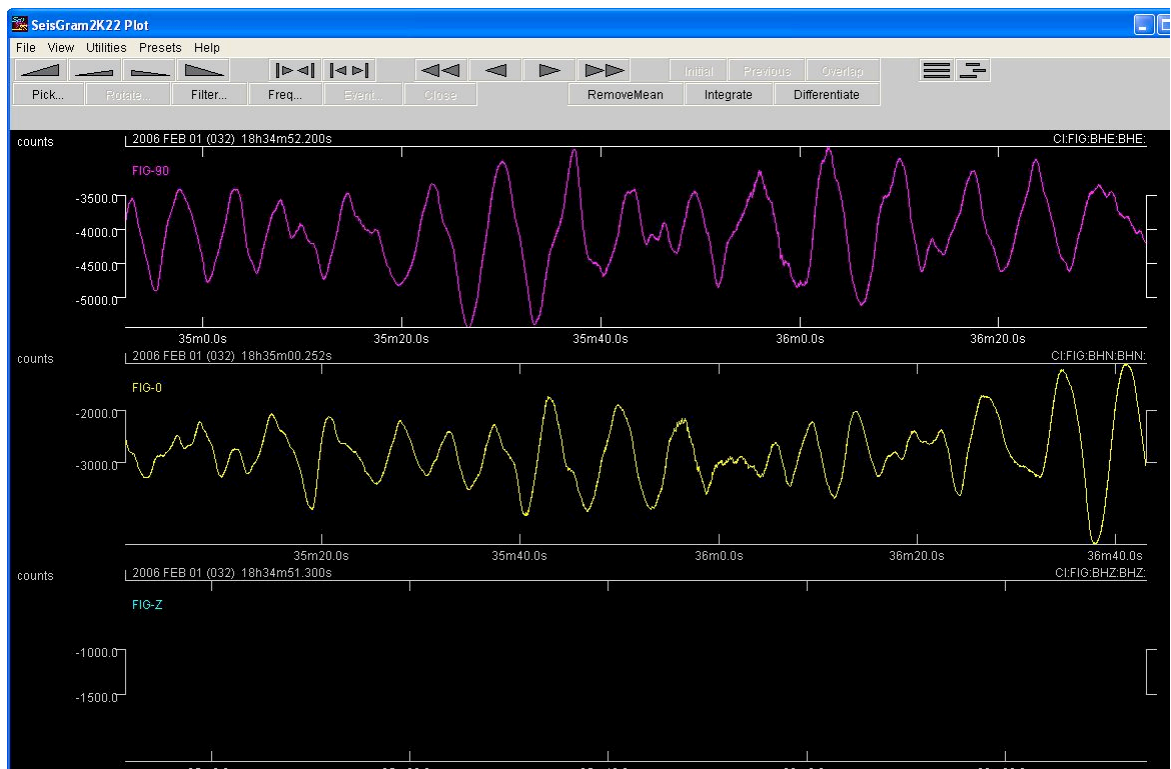


Figure 7 - Plotting waveforms.

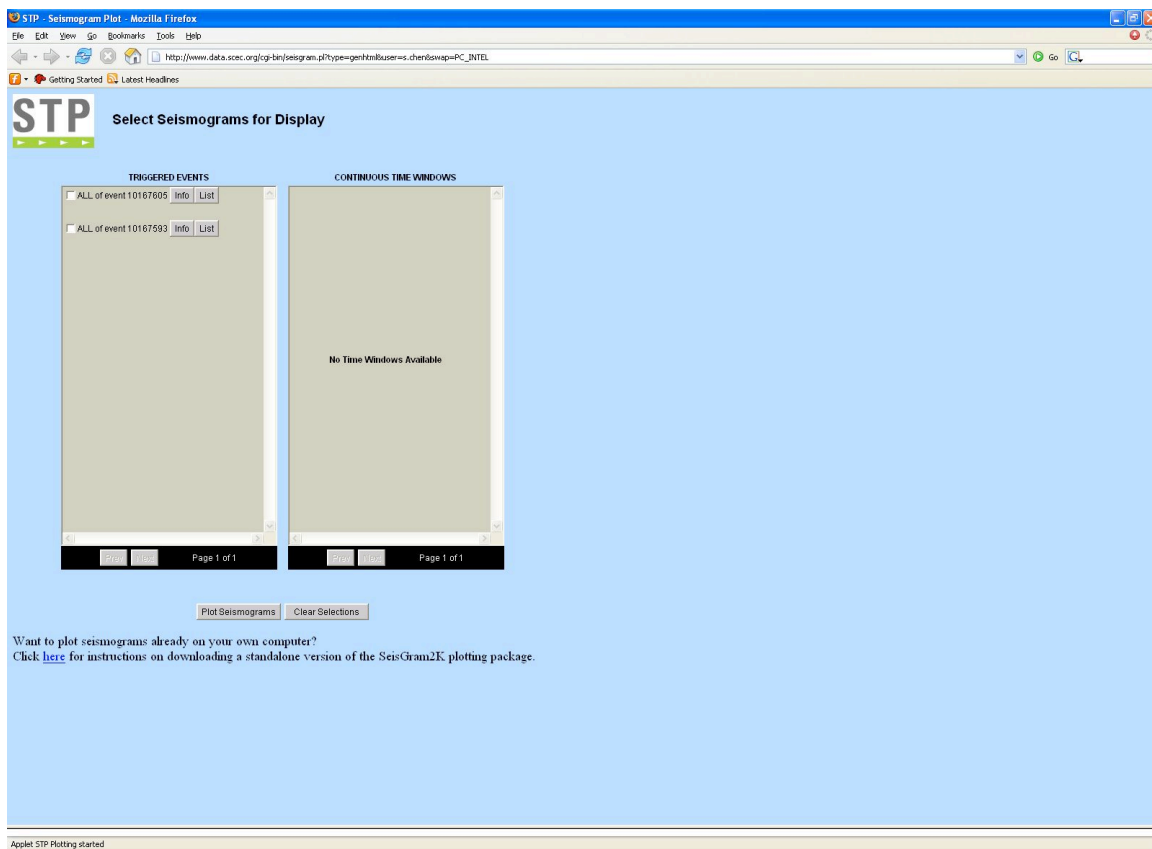


Figure 8 - Selecting waveforms to plot.

5.2 Downloading Continuous Time-Window Waveforms

To download continuous waveforms, first select the “Time Window” option at the top of the applet (**Figure 2**). The specification of time windows, stations, and channels is almost identical to the search covered in the section on finding events, with the difference that continuous time-window mode does not offer options for searching by magnitude, location, depth, or event type. Once you have entered your criteria, click “Put Data on FTP site” to upload the waveform files onto our servers. Continuous time-window waveforms are named in the format “timestamp.net.station.channel.extension.” See section 5.2.3 for information on downloading and plotting waveforms and section 5.2.1 for information on setting waveform options.

5.3 Downloading Phase Picks

Selecting the “Phase” option (**Figure 2**) switches the applet into phase pick mode. This mode looks like a simplified version of triggered mode. In fact, searching for events is identical to the method covered in the section on finding events. Again, you can search for events by time window, magnitude, latitude, longitude, depth, and event type. Once you have a list of events, you can add them to the “Event ID” list in the same way that you added events for waveform downloading. Finally, enter a file name in the “Output File” field (**Figure 9**) and click “Put Data on FTP Site.” When you click on “View files on FTP site,” a text file with the name you entered should appear in your FTP directory in a separate browser window. Click on the file name to open and display the phase picks it contains. If you do not provide an output file name, your phase picks will be stored in a

temporary file named “.temp” in your FTP directory. This temporary file will open automatically in a separate browser window when you click “Put Data on FTP Site.”

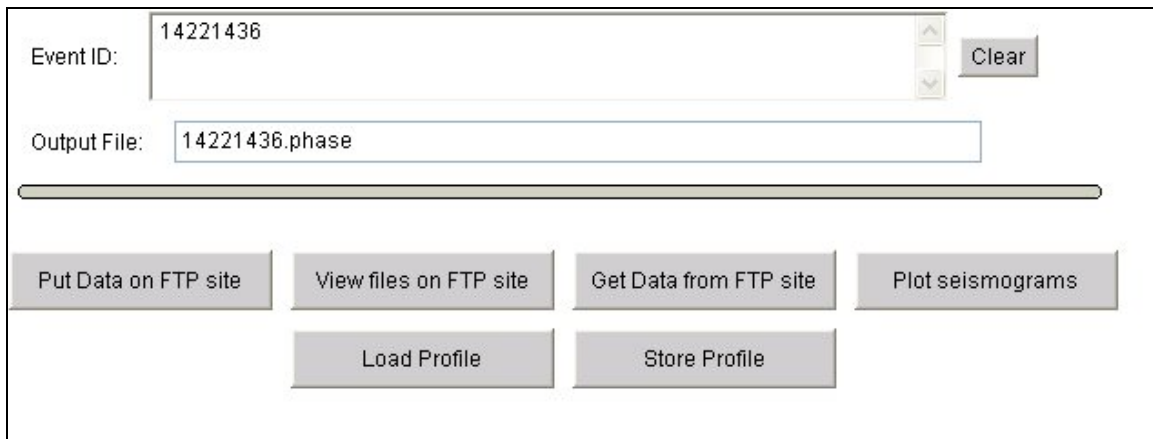


Figure 9 - Phase picks.

5.4 Profiles

If you frequently use certain search criteria, you may want to save them for future use as a profile. To do this, click on “Store Profile.” Enter the name of the profile in the resulting dialog window (**Figure 10**). If you want this profile to load automatically every time you log in, select “Make default profile.” Then click “OK.” In the next dialog window, click “Yes” and your profile will be saved on our server.

To load an existing profile, click on “Load Profile.” The resulting dialog window will display your login name and a list of profiles (**Figure 11**). Select the profile you want, and click on “Use Selected Profile” to load it. You can make the selected profile default by selecting “Make default profile.” The applet will load the search settings that were stored in the profile you selected.

You can also use other users’ profiles if you know their login names. Type another user’s login name in the “User:” field and press the ENTER key on your keyboard. A list of their profiles will appear in the “Profiles:” box, and you can select the one you want.

If you decide you don’t want to use any profile for your current session, click on “Use No Profile” to close the dialog and continue.



Figure 10 - Saving a profile.



Figure 11 - Loading a profile.

6 Appendix A- STP Help Files

This section contains listings of the interactive help files available in command-line STP. You can access each help file from within STP by entering the command:

```
HELP topic
```

replacing “topic” with the title of one of the following sections.

6.1 NEWS

The command

```
HELP NEWS
```

displays the latest STP news instead of a regular help file.

6.2 WIN

Command: WIN - Retrieves seismograms that match the search criteria.
By default only the continuous archive is searched.

Synopsis:

```
WIN [-t] [-a] net sta chan time_on time_off
```

Options:

```
-t          Search only the triggered archive.  
-a          Search all archives.
```

Parameters:

```
net         - network code (i.e. CI)  
sta         - station code (i.e. PAS)  
chan        - seed channel name (i.e. BHZ)  
time_on     - date/time of start of record  
time_off    - date/time of end of record
```

Wild cards ('%') and letters ('_') can be used in the net/sta/chan names.

Seismogram file names follow the format

```
YYYYMMDDHHMMSS.NET.STA.CHAN.[LOC.]EXT
```

YYYYMMDDHHMMSS is the starting timestamp of the request. If the location code is the default double blanks, then it is omitted from the file name.

By default, waveforms are downloaded in SAC format, which ends with the “sac” extension. See HELP SAC for details.

Notes:

After an event it may be some time before the continuous archive is available. For the SCEDC, this can be around a 2 hour delay or longer if there is a major earthquake sequence in progress.

The time windows will be reduced with the triggered archive by what is available in the trigger window.

To see the list of available stations and channels, use the 'STA' command. See "HELP STA."

For date/time formats, see "HELP DATE."

Examples:

```
WIN CI PAS BHZ 1999/12/23,10:24:14.12 1999/12/23,11:33:15.23
Get the CI.PAS.BHZ continuous data from December 23, 199,
10:24:14 to December 23, 1999, 11:33:15.23.
```

```
WIN CI PAS BH_ 2000/02/14,10:00:00 +1.2h
Get 1.2 hours of all three components of the
CI.PAS.BH(Z/E/N) channels, starting from 10:00 on February
14, 2000.
```

6.3 WIND

Command: WIND - Version of WIN that allows searching by location code.

Synopsis:

```
WIND [-t] [-a] net sta chan loc time_on time_off
```

Options:

```
-t          Search only the triggered archive.
-a          Search all archives.
```

Parameters:

```
net         - network code (i.e. CI)
sta         - station code (i.e. PAS)
chan        - seed channel name (i.e. BHZ)
loc         - location code (i.e. 01)
time_on     - date/time of start of record
time_off    - date/time of end of record
```

Wild cards ('%') and letters ('_') can be used in the network, station, channel, and location code names. '-' represents a blank space in location code names.

Seismogram file follow the format

```
YYYYMMDDHHMMSS.NET.STA.CHAN.[LOC.]EXT
YYYYMMDDHHMMSS is the starting timestamp of the request. If
the location code is the default double blanks, then it is
omitted from the file name.
```

By default, waveforms are downloaded in SAC format, which ends with the "sac" extension.

Notes:

After an event it may be some time before the continuous archive is available. For the SCEDC, this can be around a 2 hour delay or longer if there is a major earthquake sequence in progress.

The time windows will be reduced with the triggered archive by what is available in the trigger window.

To see the list of available stations and channels, use the 'STA' command. See "HELP STA."

For date/time formats, see "HELP DATE."

Examples:

```
WIND CI PAS BHZ -- 1999/12/23,10:24:14.12
1999/12/23,11:33:15.23
Get the CI.PAS.BHZ continuous data from December 23, 1999,
10:24:14 to December 23, 1999, 11:33:15.23. Only get data
from the double blanks location code.

WIND CI PAS BH_ % 2000/02/14,10:00:00 +1.2h
Get 1.2 hours of all three components of the
CI.PAS.BH(Z/E/N)
channels, starting from 10:00 on February 14, 2000. Get all
location codes. For this station, the only location code is
the default double blanks.
```

6.4 TRIG

Command: TRIG - Returns all triggered seismograms for the specified events.

Synopsis:

```
TRIG [-net network] [-sta station] [-chan seedchan] [-loc
locationcode] [-radius maxdist] eventid eventid ...
```

where eventid is numeric identifier of the event. All flags are optional except for eventid.

The STP program creates a directory with the name 'eventid' and puts the seismograms in there. The parameters of the event are also put in the directory in a file 'eventid.evnt'. The format of the seismogram files depends on the mode the user has selected. SAC mode is selected by default. See help SAC and help MSEED for more information.

The optional parameters -net, -sta, -chan, and -loc may be useful to restrict the class of returned seismograms. The usual Oracle/SQL wildcards apply. That is '_' matches and single letter, and '%' matches any sequence of letters. Hence, -chan BH_ will match the BHZ, BHE, BHN (and BH1, BH2, BH3) channels. The parameter -radius restricts seismograms to those from stations within a specified radius in kilometers from the event.

Examples:

```
TRIG 9501793
TRIG -net CI -chan BH_ 9589201
TRIG -sta PAS 9589201
TRIG -net CI -dist 100 9589201
```

6.5 STA

Command: STA - Lists the stations available in the SCEDC archive

within a specified time interval or at a specified time.

Synopsis:

STA [-l] [-net net] [-sta station] [-chan channel] [-loc locationcode] [date] [date2]
where date is in the format described in DATES. See help DATES for more information.

If no date is given, the current date is used. If one date is given, then the stations active on that date are returned. If two dates are given, then stations with any activity during that interval are returned.

Do not use dates before 1971 or after 2037 (the extent of UT seconds).

Options:

-l Long listing. Each line displays the following:
Net.Sta.Chan.Loc lat lon elevation

Examples:

STA 1999/12/13
STA -l
STA -l 1971 2010
(this will return the entire station list)

6.6 CHAN

Command: CHAN - Lists seed channels that meet the user's search criteria.

Synopsis:

CHAN [-l] net sta [date]

Lists the seed channels available for station 'sta' on network 'net' on date 'date'. Date is specified according to HELP DATE. If no date is given the current date is used.

Flags:

-l Long listing. Each line has
Net.Sta.Chan azimuth sample_rate gain units

Examples:

CHAN CI PAS 2000/04/15
CHAN -l CI RVR

6.7 EVENT

Command: EVENT - Find events in the catalog that match the search criteria.

Synopsis:

EVENT [output_options] <search_criteria>
EVENT [output_options] -e eventid1 eventid2 ...

Any of the following search criteria may be specified:

```
-mag    magmin magmax
-t0     date1 date2    (see help DATES for format of dates)
-lat    latmin latmax
-lon    lonmin lonmax
-depth  depthmin depthmax
-type   event_type (le = local, ts = teleseisms)
```

output options:

```
-f    filename - put event info in 'filename'
-s                    short listing multi-columns of eventids.
                    default: long listing, includes
                    '#' eventid, event_type, t0, lat, lon, depth, mag,
                    mag_type, quality.
```

By default, a max of 100 events are listed. You can change this with 'SET NEVNTMAX nnnn', where nnnn is the new limit.

Output:

```
event id ET      origin date-time      lat      lon
depth mag MT qual
9720297 le 2001/11/04,02:01:31.740    33.5135   -116.5095
15.81  1.27  1 1.0
```

```
ET= event type
    le = local event          qb = quarry blast  sn = sonic boom
    re = regional event      nt = nuclear blast
    ts = teleseism          uk = unknown event
```

```
MT= magnitude type
    b = body-wave magnitude      e = energy magnitude
    l = local magnitude          s = surface-wave magnitude
    c = coda magnitude           n = no magnitude
    w = moment magnitude         h = helicorder magnitude
```

```
qual= solution/location quality [0.0,1.0], 0.0 -> worst, 1.0
-> best
old quality measures: 'A'=[0.8,1.0], 'B'=[0.6,0.8],
'C'=[0.4,0.6], 'D'=[0.0,0.4]
```

Examples:

```
EVENT -mag 6.5 8.0 -type ts
      (teleseisms of mag >= 6.5)
EVENT -t0 2000/04/15 +12h
      (all events within 12 hours of midnight on April 15,2000)
EVENT -t0 -6h +6h
      (all events in the last 6 hours)
EVENT -e 14187288
      (event with ID 14187288)
EVENT -f events.out -e 14187288 14172228
      (events 14187288 and 14172228, output written to file
      events.out on user's local computer)
```

6.8 ALTLOC

Command: ALTLOC - Find events in the various alternate catalogs.

Synopsis:

```
ALTLOC [-s] [-l] [-mag magmin magmax] [-t0 date1 date 2] [-lat latmin latmax] [-lon lonmin lonmax] [-depth depthmin depthmax] [-source catalog1, catalog2, ... ]
```

Optional parameters:

```
-s      : (default) short listing, includes
          eventid, t0, lat, lon, depth, mag,
          mag_type, source
-l      : long listing, includes
          eventid, t0, lat, lon, depth, mag, mag_type,
          source, err_ns, err_ew, err_z, num_primary,
          num_secondary, total_ps, rms
The following search criteria may be specified:
-mag    : magnitude range
-t0     : time window (see help DATES for format of dates)
-lat    : latitude range
-lon    : longitude range
-depth  : depth range
-source : catalog name (i.e. HAU2003, SHLK2003)
```

By default, a max of 100 events are listed. You can change this with 'SET NEVNTMAX nnnn', where nnnn is the new limit.

Examples:

```
altloc -t0 2003/01/02 2003/01/03 -mag 2.5 3.0
Output:
9875545 2003/01/02,03:45:59.400 34.0202 -116.4317
9.14 2.56 1 HAU2003
9875545 2003/01/02,03:45:59.840 34.0168 -116.4347
7.81 2.56 1 SCSN
9875637 2003/01/02,15:55:15.250 35.3198 -118.6693
5.76 2.51 1 HAU2003
9875637 2003/01/02,15:55:15.570 35.3212 -118.6697
5.60 2.51 1 SCSN
9875677 2003/01/02,17:49:28.070 32.2377 -115.7682
5.53 2.54 1 HAU2003
9875677 2003/01/02,17:49:28.770 32.2467 -115.7912
6.99 2.54 1 SCSN
9513574 2003/01/02,17:49:47.230 32.3122 -115.7478
4.86 2.55 1 HAU2003
```

6.9 PHASE

Command: PHASE - Get phase picks for events that match the search Criteria or that match the given event IDs. By default output is displayed onscreen unless the -f flag is set and/or the output mode is XML.

Synopsis:

```
PHASE [-v] [-f filename] search_criteria
or
```

PHASE [-v] [-f filename] -e eventid1 eventid2 eventid3

Options:

- v quiet mode - minimal reporting
- f filename - put phase and event info in 'filename'.
- e specify events by eventid rather than search

Any of the following search_criteria may be specified:

- mag magmin magmax
- t0 date1 date2 (see help DATES for format of dates)
- lat latmin latmax
- lon lonmin lonmax
- depth depthmin depthmax
- type event_type (le = local, ts = teleseisms)

Output:

- event location starting with '#' - see help EVENT for format
- phase info
 - net, station, channel, lat, lon, elevation, phase, first-motion, signal onset quality, quality-of-pick, epicentral distance, time (after origin time).

For signal onset quality:

- i = impulsive
- e = emergent
- w = weak

For first motion:

The first character represents short-period channels
c=compression, d=dilation, .=empty character position
The second character represents long-period channels
u=compression, r=dilation, .=empty character position

For quality of pick:

Range is 0 (worst) to 1.0 (best)
Uncertainty of 0 samples is indicated by 1.0

1 sample	0.8
2 samples	0.5
3 samples	0.3
>3 samples	0.0

By default, a max of 100 events are listed. You can change this with 'SET NEVNTMAX nnnn', where nnnn is the new limit.

Examples:

```
PHASE -t0 2001/01/05 2001/01/12 -mag 3.0 9.0 -type le
(local events with magnitude >=3.0 and <=9.0 between Jan 5-
12, 2001)
PHASE -f junk1 -t0 2001/01/05 2001/01/12 -mag 3.0 9.0 -type
le
(same thing with output going to file 'junk1')
PHASE -t0 2000/04/15 +12h
(all phase within 12 hours midnight on April 15,2000)
PHASE -t0 -6h +6h
(all events in the last 6 hours)
```

6.10 SAC

Command: SAC - Put seismic data output in SAC-format files created locally on the user's computer. Used with the WIN and TRIG commands.

Synopsis:

For continuous data (WIN command), the files are named
yyyyymmddhhmmss.NET.STA.CHAN.sac
i.e. 20000223120415.CI.PAS.BHZ.sac

For triggered data (TRIG command), the files are named
nnnnnnn/nnnnnnn.NET.STA.CHAN.sac
where nnnnnnn is the eventid of the event.
i.e. 9512345/9512345.CI.PAS.BHZ.sac
NOTE: the directory nnnnnnn/ is created if it does not exist.

Note of Units:

Although SAC defines its units with a distance scale of nm (nanometers), and hence units of nm, nm/sec and nm/sec**2, STP uses the native units of TriNET which uses a length scale of cm (centimeters).

Examples:

```
SAC
TRIG -net CI -sta PAS -chan BHZ 9512345
```

The above sequence of commands creates a directory named 9512345 if it doesn't exist. Within 9512345 a file is created named 9512345.CI.PAS.BHZ.sac.

6.11 MSEED

Command: MSEED - Put waveform output in mini-seed file on the user's computer. Used with the TRIG and WIN commands.

Synopsis:

The output filename is in the format
eventid/eventid.net.sta.chan.mseed
for triggered waveforms. For continuous waveforms the output filename is the format
yyyyymmddhhmmss.net.sta.chan.mseed

Examples:

```
mseed
trig -net AZ -sta FRD -chan BHZ 14200524
```

6.12 SEED

Command: SEED - Put waveform output in SEED files on the user's computer. Used with the TRIG and WIN commands.

Synopsis:

SEED

The output filename is in the format

eventid.net.sta.chan.seed

for triggered waveforms. For continuous waveforms the output filename is in the format

yyyymmddhhmmss.net.sta.chan.seed.

The output SEED volumes will include, if available, channel gains, responses, and poles and zeros for the epochs relevant to the time window.

Please note that the SCEDC is not the authoritative source for non-CI stations. As a result, the SEED headers for non-CI stations may be incomplete or out of date. If a station lacks sufficient information to construct a valid SEED volume, the downloaded file will be in miniSEED format. The dataless SEED volumes required to make a full SEED volume should be downloaded from the authoritative source for the station.

Examples:

seed

trig -net AZ -sta FRD -chan BHZ 14200524

The output file is 14200524.AZ.FRD.BHZ.seed in the directory 14200524.

6.13 FLT32

Command: FLT32 - Put waveform output in a 32-bit IEEE float file on the user's computer. Used with the TRIG and WIN commands.

Synopsis:

The output filename has the format

eventid/eventide.net.sta.chan.flt32

for triggered waveforms and

yyyymmddhhmmss.net.sta.chan.flt32

for continuous waveforms.

6.14 INT32

Command: INT32 - Put waveform output in a 32-bit integer file on the user's computer. Used with TRIG and WIN commands.

Synopsis:

INT32

The output filename has the format

eventid/eventid.net.sta.chan.int32

for triggered waveforms and

yyyymmddhhmmss.net.sta.chan.int32

for continuous waveforms

6.15 ASCII

Command: ASCII - Put waveform output in an ASCII-format on the user's computer. Used with TRIG and WIN commands.

Synopsis:

FLT32

The output filename has the format
eventid/eventid.net.sta.chan.ascii
for triggered waveforms and
yyyyymmddhhmmss.net.sta.chan.ascii
for continuous waveforms.
The first line of the ASCII file is a header beginning with
'#' that contains net, station, channel, date-time, UT-time,
and sample interval. An example is:

```
# CI PAS BHE 1999/11/12,10:30:15.000 942402615.000
0.050000
Both the date-time and the UT-time (seconds since Jan 1,
1970) are the time of the first sample. The data follows
with one sample per line.
```

Examples:

```
ASCII
trig -net AZ -sta FRD -chan BHZ 14200524
```

6.16 COSMOS

Command: COSMOS - Put output in COSMOS V0 or V1 format.

Synopsis:

```
COSMOS [V0|V1]
COSMOS-[V0|V1]
V0
V1
```

There are several ways of issuing the COSMOS command.

```
V0
is a shortcut for
COSMOS-V0
or
COSMOS V0
```

All three versions will put output in COSMOS V0 format,
Similarly, any of the following three commands:

```
V1
COSMOS V1
COSMOS-V1
```

put output in COSMOS V1 format

The COSMOS format is the brain-child of the Constorium of
Organizations for Strong-Motion Observation Systems. See
the document

www.cosmos-eq.org/cosmos_format_1_120.pdf
for an explanation of the format.

The V0 format is for raw data and stp sends raw integer
values that are completely unprocessed. Even when 'GAIN ON'
is set no gain is applied.

The V1 format is for data values for which instrument gain
has been corrected. Even if 'GAIN OFF' is specified, the
data ARE corrected for gain. Output units will be cm/sec for
velocity sensors and cm/sec/sec for accelerometers. The only

processing done to the V1 format data is removing the average value of the timeseries. The average is recorded in the header.

In the user-specified portion of the header, we have added

```
Integer-part
    ihead(90) = event ID (if known or relevant)
Real-part
    fhead(90) = station gain/ 1000.
                This is the factor that converts counts to
                samples with units. This is
                v1-data = raw-data / gain.
```

Note: At the moment there is no numbering scheme for the TriNet stations. The true identity of the station and component is given in the comment lines after the real-part of the header.

Examples:

```
v1
trig -sta DNR -chan HL_ 9753421
```

This gets the accelerometer records (components HL_) for station DNR for event 9753421 in Cosmos V1 format. Four files (three data files) and 1 event summary file are created:

```
9753421/9753421.CI.DNR.HLE.v1
9753421/9753421.CI.DNR.HLN.v1
9753421/9753421.CI.DNR.HLZ.v1
9753421/9753421.evnt
```

6.17 XML

Command: XML - Write the output of PHASE and EVENT commands to a local XML file.

Synopsis:

To return to normal onscreen output, use command "NORM". See help PHASE and help EVENT for more information about those commands.

Our XML schema can be downloaded from <http://www.data.scec.org/xml/event.xsd>. Documentation is available at <http://www.data.scec.org/xml/event>, and general information can be found at <http://www.data.scec.org/xml>

6.18 NORM

Command: NORM - Return to normal onscreen output after entering XML mode.

6.19 GAIN

Command: GAIN - Toggle correction for station gain.

Synopsis:

GAIN [on|off]
on -> correct the seismograms for station gain
off -> do not apply gain corrections to the seismograms

Examples:

GAIN ON
GAIN OFF

6.20 DATE

Synopsis:

Specifying date and time:

We've recently changed the way STP handles dates internally. It is now very important that punctuation is handled in a specific way. Below is a table specifying the correct punctuation for each format:

FMT	SLASHES	COMMAS	COLONS	OTHER COMMENTS
1	0	0	0	must end with 'u'
2	0	0	0	must pad with '0's to get correct format (i.e. 200301 is right, 20031 is wrong)
3	2	1	2	no padding necessary, 2003/01 = 2003/1
	2	0	0	
4	0	3	2	no padding necessary, 2003,01 = 2003,1
	0	2	0	
5	1	1	2	no padding necessary, 2003/15 = 2003/015
	1	0	0	
6	0	2	2	no padding necessary, 2003,15=2003,015
	0	1	0	

The following formats can generally be used interchangeably when specifying date and times on the STP commands:

FMT	SPECIFICATION	DESCRIPTION
1	ssssssssss.sssu	UT seconds, note 'u' is literal
2	yyyymmddhhmmss.sss	decimal encoded year-month-day
3	yyyy/mm/dd,hh:mm:ss.sss	year-month-day with '/'
4	yyyy,mm,dd,hh:mm:ss.sss	year-month-day with ','
5	yyyy/jjj,hh:mm:ss.sss	year-jday with '/'
6	yyyy,jjj,hh:mm:ss.sss	year-jday with ','

Note that all will assume minimums if all or any part of hh:mm:ss.sss is omitted. Format 2 can be minimized down to just the 4 digit year.

In cases when a time window is being specified such as with the WIN command, the second time can be specified as incremental to the first by giving it as

```
+nnnnnn.nnn[s,m,h,d]    incremental value '+' is literal
                           nothing= seconds
                           s= seconds
                           m= minutes
                           h= hours
                           d= days
```

The '+' is the key to interpreting this as incremental

The first time in a time window can be specified as
-nnnnnn.nnn[s,m,h,d] before present time, value '-' is
 Literal set the time to this value
 before present.

Examples:

The following are equivalent for the 'ton'-'toff' of the WIN command:

20000415181617.1	20000415181817.1	
2000/04/15,18:16:17.1	2000/04/15,18:18:17.1	
2000/04/15,18:16:17.1	+2.0m	
2000/04/15,18:16:17.1	+120s	
-8h	+8h	<- time interval is 8 hours before present

6.21 INPUT

Command: INPUT - Sets STP to read input commands from a file on the user's local computer.

Synopsis:

INPUT filename
where "filename" is the path to the file containing STP commands. At the end of the file, the input returns to the terminal. Output and error messages from the commands in "filename" are displayed normally. The IN command can be used instead of INPUT as shorthand.

Examples:

```
INPUT myfile
IN  myfile
```

6.22 OUTPUT

Command: OUTPUT - Toggles whether the output of an STP command should be written to a file on your local computer.

Synopsis:

```
OUTPUT filename
OUTPUT off
```

The first form of the command causes a copy of what is written to the screen to be simultaneously written to the file 'filename'. The second form turns this off.

This command is useful for making lists of stations, etc. The first form should be entered before running the commands that you want to write to 'filename'. If you run multiple commands before OUTPUT off, output from each subsequent command will be appended to the end of 'filename.'

If file 'filename' already exists on your local computer when you run the OUTPUT command, the old 'filename' will be overwritten. If 'filename' does not exist, it will be created. By default 'filename' is created in the current directory in which you are running STP unless a path is specified as part of 'filename'. Paths can be absolute or relative. If paths are specified, all directories in the path must exist already.

The status of OUTPUT is not saved between sessions. For example, if you create stp.out during one session, exit STP, and run

```
OUTPUT stp.out
```

during the next session, stp.out will be overwritten.

Examples:

```
OUTPUT my_station_list
STA -1
OUTPUT off
OUTPUT channel_info
CHAN -1 CI PAS
CHAN -1 CI RVR
OUTPUT off
!mkdir stp_out
OUTPUT stp_out/my_stations_list2
STA -1
OUTPUT off
```

6.23 STATUS

Command: STATUS - Report on the status of certain session parameters on both the local client STP and the server.

Synopsis:

```
STATUS
```

The command 'S' can be used as an abbreviation for STATUS.

Examples:

```
STATUS
S
```

6.24 VERBOSE

Command: VERBOSE - Toggle verbose mode on/off.

Synopsis:

VERBOSE

Verbose mode causes extra information to be displayed on the terminal of the STP server. This command is really only relevant to STP developers.

6.25 UPGRADE

Command: UPGRADE - Downloads the latest version of the STP command-line client software.

Synopsis:

After executing the command there will be a file stpX.Y.tar (i.e. stp1.2.tar) in the current directory. To compile the new version of STP:

tar xvf stpX.Y.tar

make stp (or make linux_stp on Linux machines)

On Linux machines the last command would be:

make linux_stp

while on Macintosh machines it would be:

make mac_stp

This command is not relevant to the Windows client.

Examples:

UPGRADE (that all there is to it)

6.26 BUGS

This is another another help topic, like NEWS, that does not display a help file. Instead,

HELP BUGS

displays a list of known bugs and other issues in STP.

6.27 AVAIL

Command: AVAIL - List available waveform table entries that match the user-specified criteria.

Synopsis:

AVAIL [-l] [-net network] [-sta station] [-chan channel]
date-time [date-time2]

If only date-time is given, waveforms whose on/off time include the specified date-time will be listed. If dste-time2 is also provided, all waveforms that include any time within the range from date-time to date-time2 will be

listed. Note that date-time2 can be specified in an incremental format (+30m, +12h, +10d) like the WIN command.

See help DATES for valid date-time formats.

The -net, -sta, and -chan options further limit the search results by net, station, and channel.

Options:

- l detailed listing
- net network give entries only for 'network'
- sta station give entries only for 'station'
- chan seedchan give entries only for 'seedchan'

NOTE: Oracle wildcards ('%' and '_') can be used in net, sta, chan specifications.

Examples:

```
AVAIL -l -net CI -sta PAS -chan BH_ 2000/04/14,12:12:12.0
AVAIL -l -net NR -sta NE71 -chan LHZ 2002/04/15 +10d
AVAIL -l -net CI -chan BH_ 2000/04/14,12:12:12.0
```

6.28 EAVAIL

Command: EAVAIL - List available triggered waveform archive entries for an event.

Synopsis:

```
EAVAIL [-l] [-net network] [-sta station] [-chan channel]
eventid
```

List available triggered waveform archive entries for the specified eventid.

Options:

- l detailed listing
- net network give entries only for 'network'
- sta station give entries only for 'station'
- chan seedchan give entries only for 'seedchan'

NOTE: Oracle wildcards ('%' and '_') can be used in net, sta, chan specifications.

Output:

Net	Sta	Cha	T	S	Start date-time	Duration
CI	NSS	HHZ	T	A	2001/10/25,04:43:29.375	2.03m

Examples:

```
eavail -l 9716149
eavail -chan EHZ 9526485
EAVAIL -l -net CI -chan BH_ 9526485
```

6.29 SET

Command: SET - Changes certain default values in STP.

Synopsis:

SET variable new_value

SET is the general command for setting certain default values in STP. The current variables that are "settable" are:

FILL	[any number]	-the padding value STP uses in filling gaps in seismograms. Default: 0.0
NEVNTMAX	[any int]	-maximum number of events reported by catalog search programs. Default:100
SWAP	[0 or 1]	- 0 => force to same byte order as STP server
		- 1 => force to opposite byte order as STP server

Examples:

```
SET FILL 9999999
SET NEVNTMAX 1000
```

7 Appendix B – Troubleshooting

In this section you'll find solutions to some common STP problems. The title of each subheading is a description of a possible error. If you can't resolve the problem you are encountering, email the administrator at schen@gps.caltech.edu.

7.1 Command-Line STP

7.1.1 General troubleshooting

When you run STP, you may find some solutions by taking advantage of STP's in-program help menus. Type

```
HELP
```

at the STP prompt for a general help menu.

Type

```
HELP command
```

for help on a specific command, replacing "command" with the actual command name.

If you still have problems with command-line STP, you can try connecting to one of our secondary STP servers, stp2 or stp3, by starting STP with the "-a" flag:

```
stp -a stp2
```

Even if a secondary STP server works, you should still contact the STP administrator at schen@gps.caltech.edu to report the problem and which, if any, servers worked.

7.1.2 I extracted the STP client's tar file, and I can't find the directory.

The files for this version of the STP client are extracted into the same directory as the tar file. If you have many files in your working files, it may be difficult to find STP files. To simplify matters and to avoid overwriting files, move the tar file into its own directory before extracting it.

7.1.3 I can't compile STP.

First, make sure that you are running the appropriate command for your operating system. If you are using Solaris, "make" should successfully compile the client. However, if you are using Linux, you will need to enter "make linux_stp," and if you are using a Macintosh, "make mac_stp." The punctuation marks are not part of the command.

If compilation still fails, make sure that your version of STP is up-to-date. The default "editline.h" that comes with STP v1.4.1 does not work with newer versions of gcc. You will need to download the bugfix from our website.

7.1.4 Only 100 events are listed when I run EVENT, but I know there should be more.

By default, only 100 events are listed even if there are more. You can change this by setting NEVNTMAX to a value larger than 100. For example,

SET NEVNTMAX 9999

sets NEVNTMAX to 9999 maximum listings, a value that is sufficient for most users.

7.1.5 I tried to download waveforms, but I got an error message about no data being available.

If you tried to download triggered waveforms from a specific network and station, it is possible that this station did not provide any data for the event. If you're unsure about a station or channel, EAVAIL to check before downloading.

If you tried to download continuous waveforms, there may be gaps in the data.

Contact the STP administrator at schen@gps.caltech.edu with suspected STP problems.

7.1.6 I tried to download waveforms and didn't get any errors, but I can't find the files.

First, make sure you're looking in the directory where STP downloads are written. Triggered waveforms are downloaded into a directory named with the event ID. Continuous waveforms are downloaded directly into your working directory and have names of the format "timestamp.net.station.channel.locode.extension."

If you still can't find any waveform files, there could be problems with the STP server or database. Try restarting the STP client to point to a different STP server, such as stp2 or stp3, and downloading the waveforms again. Please inform the administrator (schen@gps.caltech.edu) of any possible STP server problems.

7.2 Web STP

7.2.1 Nothing happens when I click "Get data from FTP site," "View files on FTP site," or "Plot Seismograms."

You must click the button labeled "Put data on FTP site" before clicking any of the other three buttons. Otherwise, there won't be any data on the FTP site to plot, view, or download.

7.1.6 I can't see the buttons for downloading or plotting seismograms.

If you leave the time, event search, station, or channel search panel open, you may run out of browser space for displaying the download buttons. To conserve space, click the appropriate "Close" button for each panel after you finish entering parameters. Web STP will remember your parameters, and you can always update them by re-opening the panel.