

LASER INTERFEROMETER GRAVITATIONAL WAVE OBSERVATORY
- LIGO - CALIFORNIA
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Accessing the Quanterra 4128 Datalogger Via Its Web Interface	
Szabolcs Márka and Zsuzsa Márka	

Distribution of this draft:
LIGO

California Institute of Technology
LIGO Project - MS 18-34
Pasadena CA 91125
Phone (626) 395-2129
Fax (626) 304-9834
E-mail: info@ligo.caltech.edu

Massachusetts Institute of Technology
LIGO Project - MS 20B-145
Cambridge, MA 01239
Phone (617) 253-4824
Fax (617) 253-7014
E-mail: info@ligo.mit.edu

WWW: <http://www.ligo.caltech.edu/>

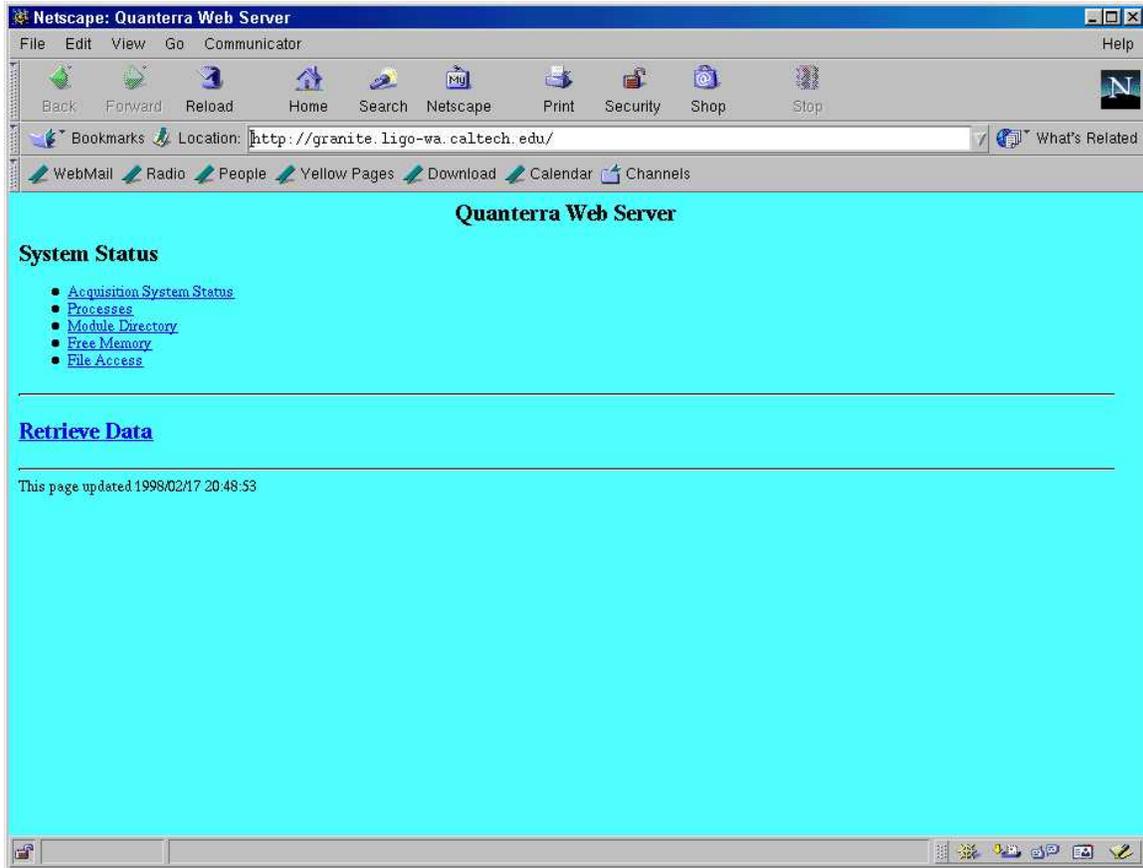
This document is intended as a quick start guide! You are encouraged to experiment and discover further functions that are useful for you.

The first steps

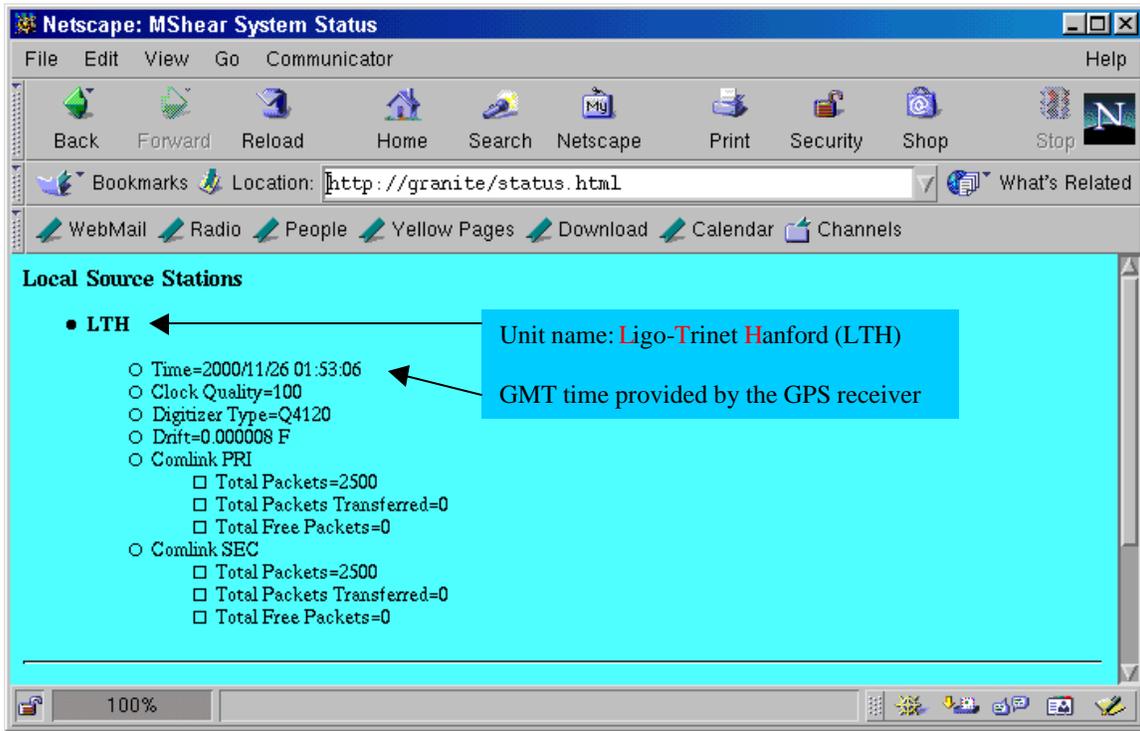
You can access the Quanterra web servers via your favorite web-browser at
<http://granite.ligo-wa.caltech.edu> (198.129.208.79) for the LHO datalogger or
<http://clay.ligo-la.caltech.edu> (130.39.245.55) for the LLO datalogger.

You have to use Microsoft Internet Explorer on PCs, while Netscape Communicator is fine for the SUN workstations when accessing the Quanterra 4128 unit! Please, remember that the primary purpose of the unit is to collect data. It will serve you the information **when it has time**, the web interface is one of the low priority processes. Please, be patient and don't abuse this service.

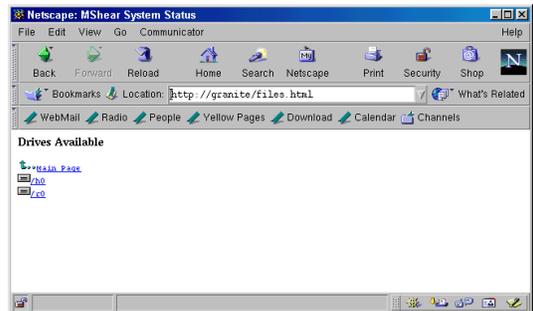
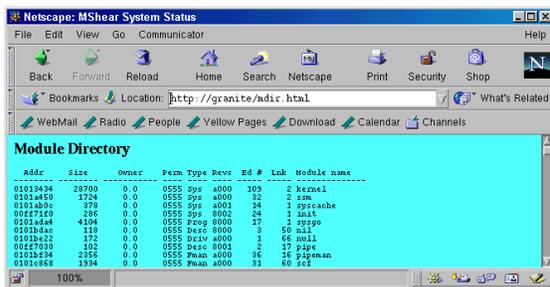
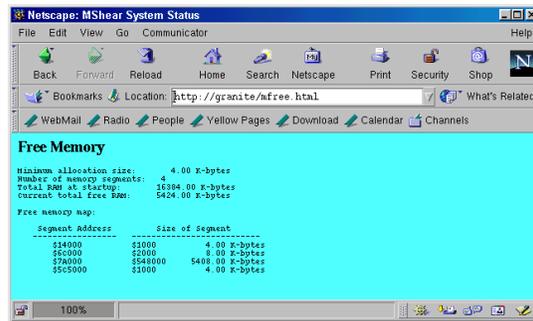
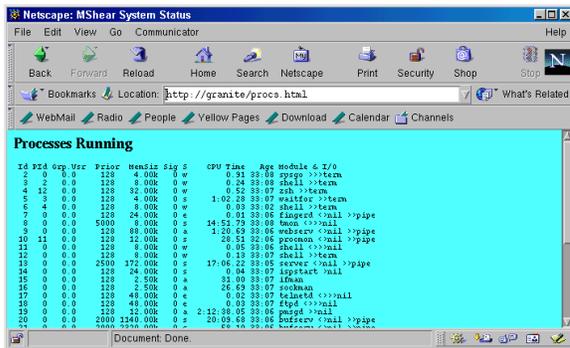
After login you will see the following screen:



The system status information is not necessary for the casual user unless he/she is determined to become a Quanterra 4128 expert. Nevertheless, here are some sample screenshots about the contents.

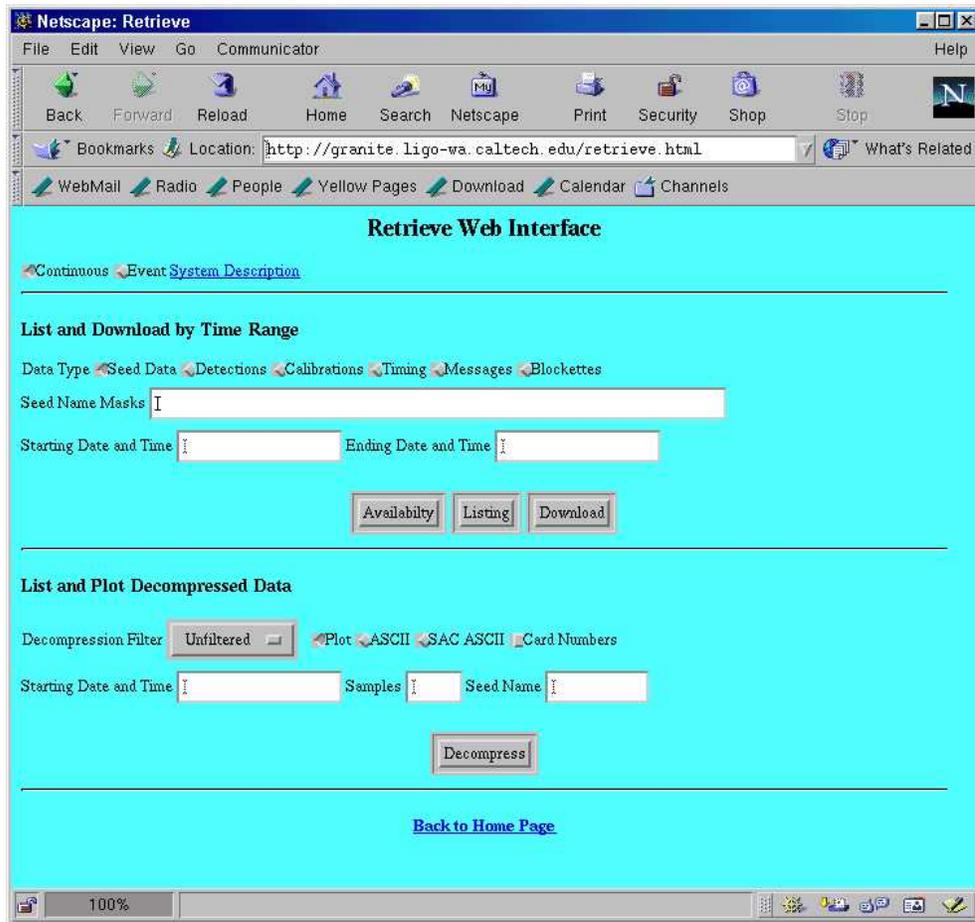


... and more and more OS9/MSHEAR details...

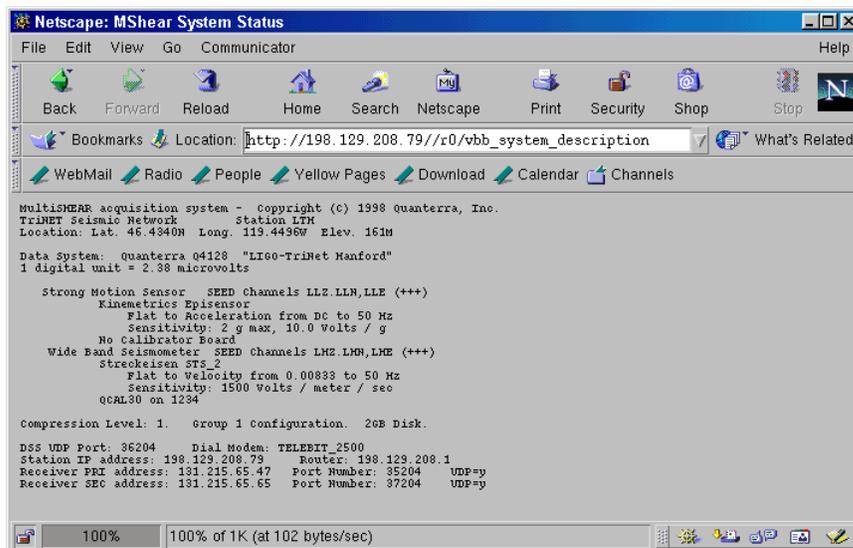


Retrieving data from Quanterra 4128

After clicking on the [Retrieve Data](#) button you will see a screen like this:



The [System Description](#) will provide you with all available info about the station (including Calibration! (e.g. for the STS-2 seismometer: $1.5 \text{ V/mm/s} / 2.38 \mu\text{V/cnt} = 630252.1 \text{ cnt/mm/s}$))



The upper portion of the screen lets you access the compressed data (you will need some kind of SEED converter tool), download the data presently stored on the local disk of the datalogger and look at the list of recorded events (triggered by the quite liberal built in event detector).

You can check the saved data on the Quanterra hard drive by choosing Continuous/Seed Data and clicking on Availability. Choosing Event/Seed Data and clicking on Availability will obtain a similar but much longer list of event data stored on local disk. Usually older data is only available from the Event Buffer.

The screenshot shows a Netscape browser window titled 'Netscape: MShear System Status'. The address bar contains 'http://granite/Retrieve'. The main content area displays a table titled 'Data Available' with the following data:

Seg	Name	Rate	Inclusive Dates	Event
1	LTH.HHZ	100	2000/11/23 10:37:36 - 2000/11/23 22:13:09	On-Line c
2	LTH.HDH	100	2000/11/23 10:37:40 - 2000/11/23 22:13:06	On-Line c
3	LTH.HDE	100	2000/11/23 10:37:29 - 2000/11/23 22:13:18	On-Line c
16	LTH.HHZ	100	2000/11/24 16:56:00 - 2000/11/26 02:17:46	On-Line c *
17	LTH.HDH	100	2000/11/24 16:56:00 - 2000/11/26 02:17:59	On-Line c *
18	LTH.HDE	100	2000/11/24 16:56:00 - 2000/11/26 02:17:52	On-Line c *
4	LTH.BHZ	20	2000/11/22 19:09:59 - 2000/11/23 22:11:55	On-Line c
5	LTH.BDH	20	2000/11/22 19:09:59 - 2000/11/23 22:12:52	On-Line c
6	LTH.BDE	20	2000/11/22 19:09:59 - 2000/11/23 22:12:16	On-Line c
22	LTH.BHZ	20	2000/11/24 16:55:59 - 2000/11/26 02:17:39	On-Line c *
24	LTH.BDH	20	2000/11/24 16:55:59 - 2000/11/26 02:17:31	On-Line c *
23	LTH.BDE	20	2000/11/24 16:55:59 - 2000/11/26 02:17:50	On-Line c *
7	LTH.LHZ	1	2000/11/22 19:09:45 - 2000/11/23 22:02:58	On-Line c
8	LTH.LDH	1	2000/11/22 19:09:45 - 2000/11/23 22:00:38	On-Line c
9	LTH.LHE	1	2000/11/22 19:09:45 - 2000/11/23 22:15:52	On-Line c
10	LTH.LLE	1	2000/11/22 19:09:45 - 2000/11/23 21:58:29	On-Line c
11	LTH.LLN	1	2000/11/22 19:09:45 - 2000/11/23 22:12:13	On-Line c
12	LTH.LLE	1	2000/11/22 19:09:45 - 2000/11/23 22:12:13	On-Line c
26	LTH.LHZ	1	2000/11/24 16:55:45 - 2000/11/26 02:16:25	On-Line c *
27	LTH.LDH	1	2000/11/24 16:55:45 - 2000/11/26 02:15:41	On-Line c *
25	LTH.LHE	1	2000/11/24 16:55:45 - 2000/11/26 02:14:35	On-Line c *
28	LTH.LLE	1	2000/11/24 16:55:45 - 2000/11/26 02:13:54	On-Line c *
29	LTH.LLN	1	2000/11/24 16:55:45 - 2000/11/26 02:13:54	On-Line c *
30	LTH.LLE	1	2000/11/24 16:55:45 - 2000/11/26 02:13:54	On-Line c *
33	LTH.VHZ	100	2000/11/24 16:52:25 - 2000/11/26 02:00:45	On-Line c *
31	LTH.VDH	100	2000/11/24 16:52:25 - 2000/11/26 01:44:05	On-Line c *
32	LTH.VHE	100	2000/11/24 16:52:25 - 2000/11/26 01:43:45	On-Line c *
34	LTH.VF1	010	2000/11/24 16:19:25 - 2000/11/26 00:06:05	On-Line c *
35	LTH.VF2	010	2000/11/24 16:19:25 - 2000/11/26 00:06:05	On-Line c *
38	LTH.UCD	010	2000/11/24 16:19:25 - 2000/11/25 15:12:45	On-Line c *
36	LTH.UFC	010	2000/11/24 16:19:25 - 2000/11/25 14:46:05	On-Line c *
37	LTH.UCQ	010	2000/11/24 16:19:25 - 2000/11/25 14:49:25	On-Line c *

The segment name has a meaning:

- the station code (first three letters, e.g. LTH = LIGO-TriNet Hanford))
- the resolution of the data (4th letter: H-high, B-medium, L-low, V-very low, U-ultra low)
- the source instrument (5th letter: H = STS-2 Very Broad Band (VBB) seismometer, L=EpiSensor Force Balance Accelerometer (FBA))
- the channel name (6th letter: Z-vertical, N-north, E-east)

The rate is given in Hertz, e.g. high sampling rate (HHX, HLX) corresponds to 100 Hz.

Quanterra usually has saved seed data from the last several days, however it saves triggered seismic events from a much longer period of time (depending on disk space).

You can get a detailed list of events by choosing Event/Detections and clicking on Listings. Please remember that the event detector will trigger on everything unusual not just on earthquakes. Often detections are caused by environmental noise and are not real seismic events.

Data Listing

Channel	P A L	S/N	Year Day Date	UTC Time	Peak Amp	Period	Noise
LNK-PRI detector pick:			2000 327=11/22	19:09:59.251	2265		2375
LTM.LF1			2000 327=11/22	19:09:59.251	2274		2375
LNK-SEC detector pick:			2000 327=11/22	19:09:59.251	2274		2375
LTM.LF2			2000 327=11/22	19:09:59.251	2274		2375
FBA_20SPS detector pick:			2000 327=11/22	19:09:57.467	396066	0.70	18750
LTM.BLZ	C R 0	00999	2000 327=11/22	19:09:57.467	396066	0.70	18750
VBE_SEIS_20SPS detector pick:			2000 327=11/22	19:21:33.267	854	0.35	251
LTM.BH2	D E 2	22233	2000 327=11/22	19:21:33.267	854	0.35	251
LTM.BH2	D E 2	10133	2000 327=11/22	19:52:38.217	1086	0.50	282
LTM.BH2	C E 2	23333	2000 327=11/22	20:30:16.567	1327	0.30	426
LTM.BH2	C E 2	12223	2000 327=11/22	21:54:13.767	1120	0.55	283
LTM.BH2	D A 1	00242	2000 327=11/22	21:56:50.217	2074	0.35	364
LTM.BH2	D R 0	00999	2000 327=11/22	23:48:02.918	1964	0.75	151
VBE_SEIS_15SPS detector pick:			2000 328=11/23	00:00:31.092	64	24.00	14
LTM.LH2	D R 2	12223	2000 328=11/23	00:00:31.092	64	24.00	14
FBA_15SPS detector pick:			2000 328=11/23	01:40:27.092	1	16.00	0
LTM.LL2	C R 0	00300	2000 328=11/23	01:40:27.092	1	16.00	0
VBE_SEIS_20SPS detector pick:			2000 328=11/23	05:09:47.418	1142	0.85	165
LTM.BH2	D R 2	00104	2000 328=11/23	05:09:47.418	1142	0.85	165
VBE_SEIS_15SPS detector pick:			2000 328=11/23	05:27:38.093	216	28.00	24
LTM.LH2	D R 1	01235	2000 328=11/23	05:27:38.093	216	28.00	24
VBE_SEIS_20SPS detector pick:			2000 328=11/23	06:49:07.718	1578	0.65	174
LTM.BH2	C R 1	10369	2000 328=11/23	06:49:07.718	1578	0.65	174
FBA_15SPS detector pick:			2000 328=11/23	07:42:18.093	1	18.00	0
LTM.LL2	C R 0	12340	2000 328=11/23	07:42:18.093	1	18.00	0
VBE_SEIS_20SPS detector pick:			2000 328=11/23	08:59:17.767	1121	0.50	145
LTM.BH2	C R 1	10168	2000 328=11/23	08:59:17.767	1121	0.50	145
VBE_SEIS_15SPS detector pick:			2000 328=11/23	16:25:49.092	54	30.00	10
LTM.LH2	C R 0	00344	2000 328=11/23	16:25:49.092	54	30.00	10
VBE_SEIS_20SPS detector pick:			2000 328=11/23	18:56:22.567	935	0.65	167
LTM.BH2	C R 1	00256	2000 328=11/23	18:56:22.567	935	0.65	167
LTM.BH2	C R 0	00580	2000 328=11/23	18:57:14.867	1442	0.75	177
LTM.BH2	D R 1	10460	2000 328=11/23	18:58:06.167	1065	0.65	188

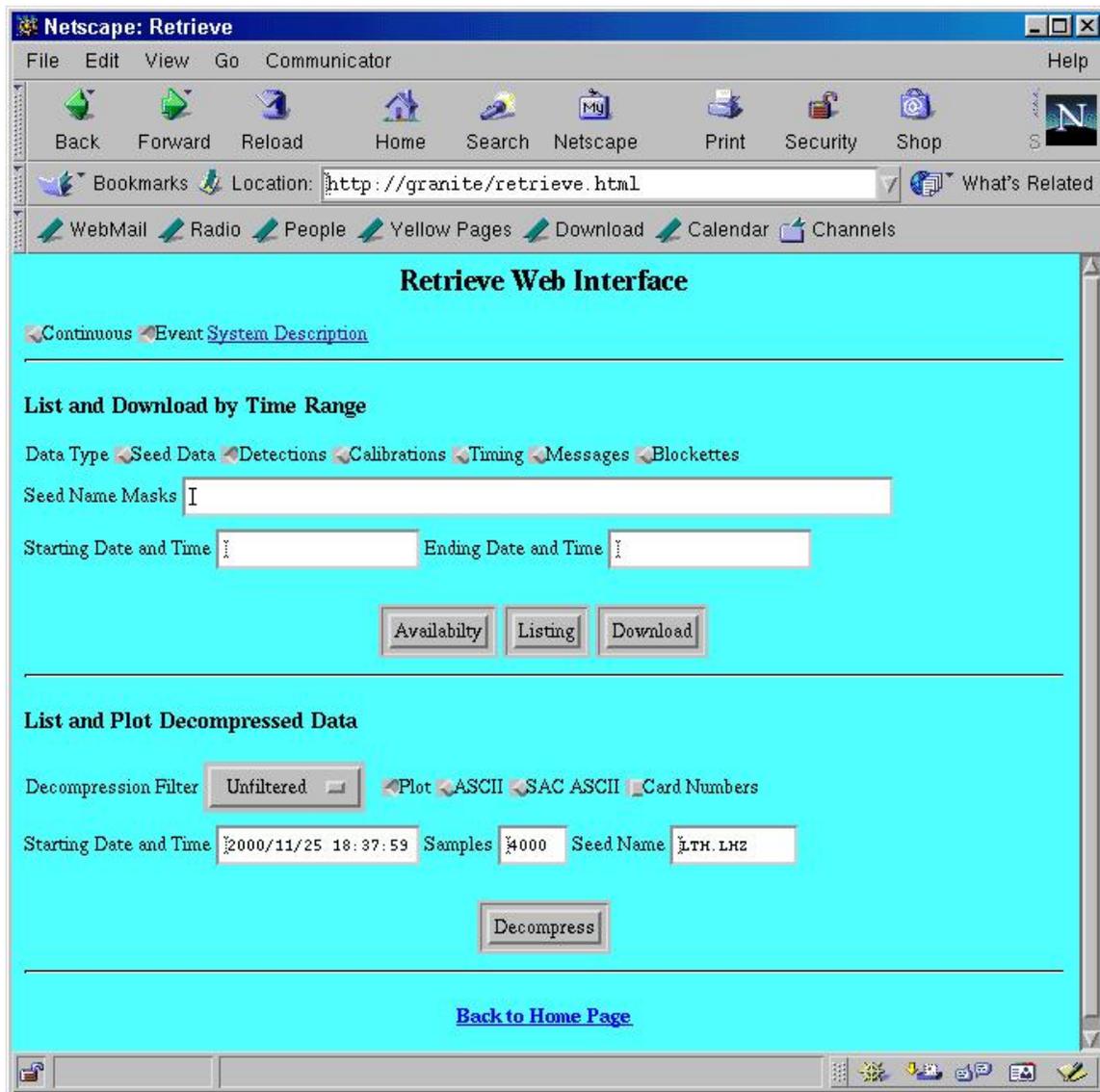
When downloading event data or making a plot, it is a good idea to leave this window open; Copy/Paste can save lots of time!

Plot and download ASCII data

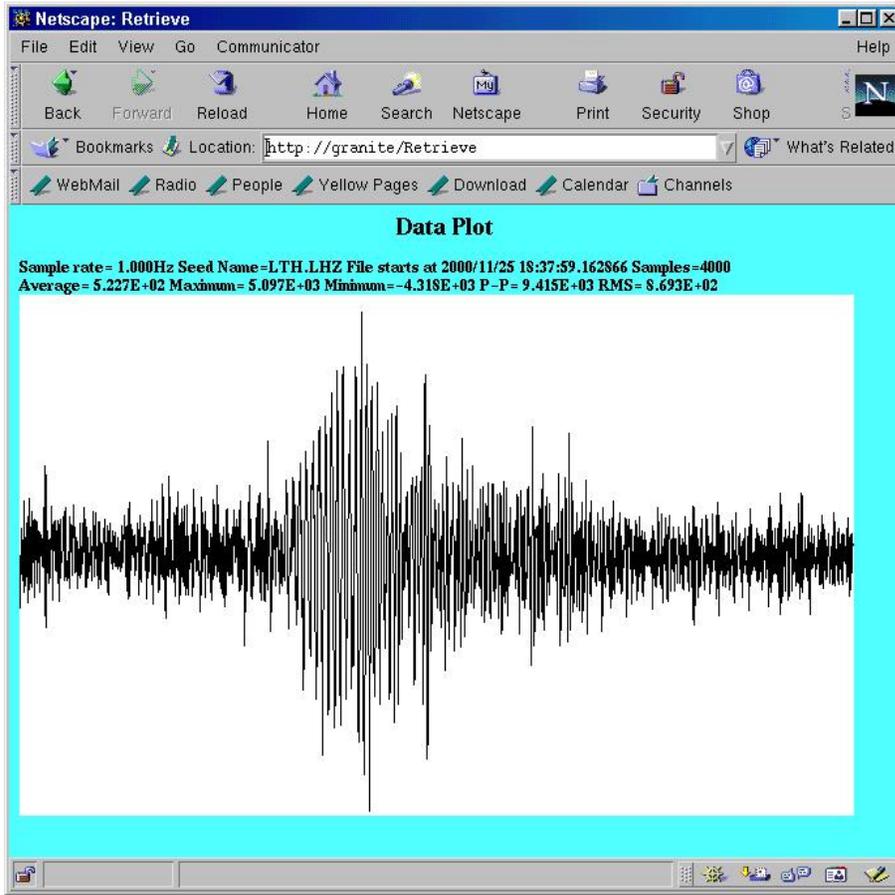
The lower portion of the Retrieve Web Interface window gives you easy access to Continuous/Event data and lets you plot it on the spot. Please remember that there is a limitation, you can only download less than 10K points in a session. This saves the unit from undue load and ensures that the data acquisition will not suffer.

To see the plot of an actual event you need to

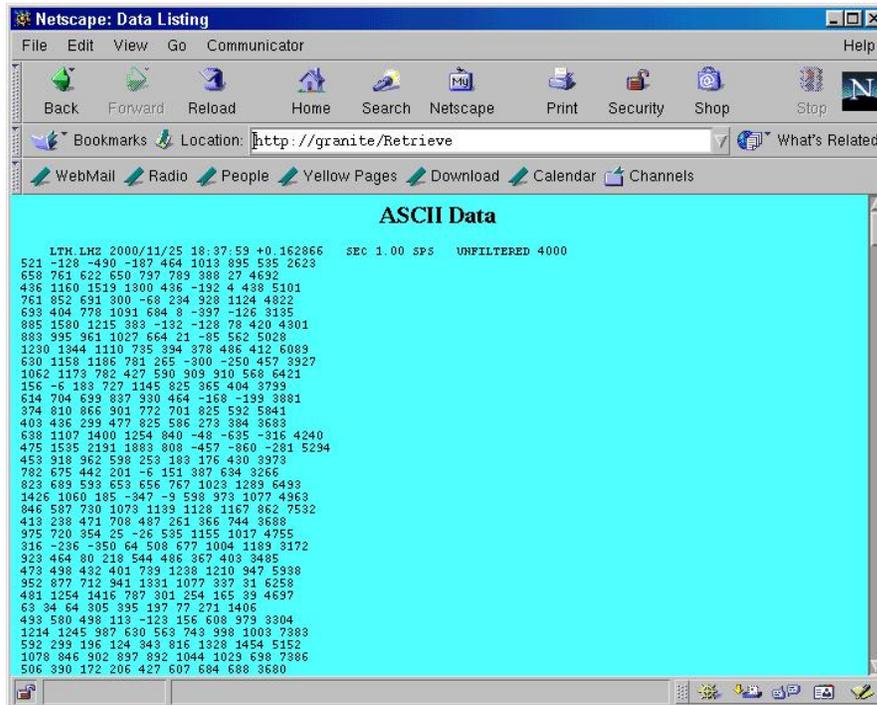
- choose Plot
- Choose your filter from the wide selection or leave the data unfiltered
- type in the corresponding time, channel (use event listing) and the number of data points (<10000!)
- and click on Decompress



Example of a event:



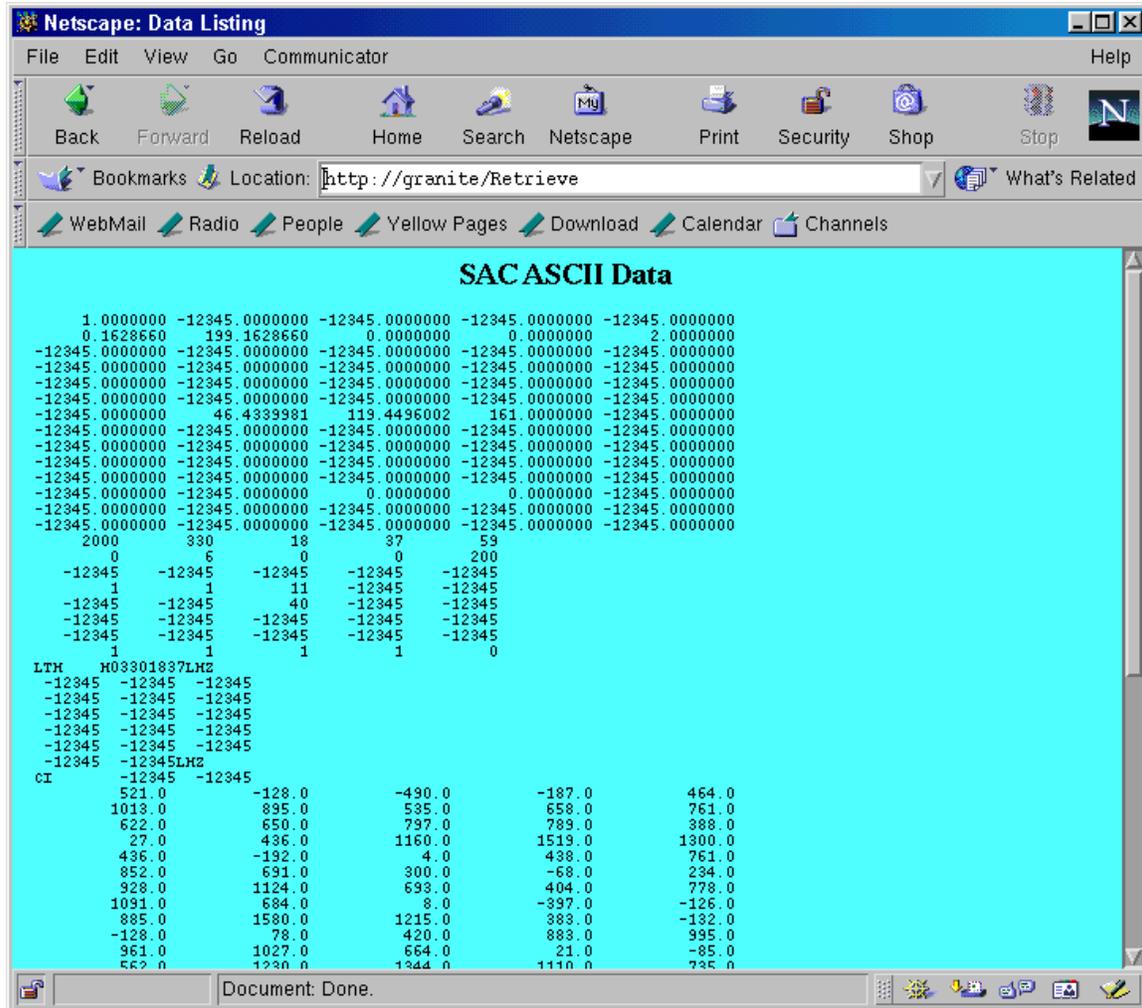
It is also possible to make your own graph with your preferred plotting program by saving the required segment of the data in an ASCII file: (choose ASCII instead Plot)



The first line gives the channel, start time, spacing and the number of data points. The next lines contain the data. You can use the following Unix script to produce a single column of data:

```
`cat <datafile.name> | awk '{a++; if(a>1){for(i=1;i<=NF;i++){print $i}}}' > <new.file>`
```

Choosing the SAC ASCII option writes a file-format usually provided by USGS stations, with the header giving the detailed station information (e.g. latitude, longitude etc.).



Acknowledgement: I would like to thank my wife Zsuzsa Márka for her help to prepare this document.

Contact: Please do not hesitate to contact me if you have any comments or questions regarding this document! (Szabi Márka, smarka@ligo.caltech.edu)