* **installation Seismometer**
* not more than 5 m away from cliff edge if possible, not to close to trees
* digging a hole 1m deep and 1m wide
* trying to make a flat surface at the ground
* use of additional plant soil
* placing the slab, make sure it is settled 🡪 pushing it down
* slab needs to be very clean and smooth 🡪 no dirt on surface
* placing the seismo with the cable attached on the slab
* the seismo needs to be oriented precisely into N-S direction
* using a compass and a string
* placing the string in N-S orientation over the hole and orientate the seismo in this direction
* afterwards the seismo needs to be leveled using the additional bubble
* orientate yourself in a way that the feet of the seimo are in a triangle
* start with the two aligned scews using the upper screws to level
* after that using the single screw “on top” of the triangle to finally level the seismo
* after leveling, the lower scews have to be used to fix this position
* 🡪 before covering the seismo with soil-it is good to check that it is leveled with the centaur and that everything else works
* if all is o.k., the hole with the seismo can be carefully filled with the original material and maybe the plant soil
* the soil should be carefully pushed and compressed a bit
* be carefull not to move the seismo
* also care is needed by burring the seismo-cable
* it’s necessary to dig a little trench beneath the grass until the box with the centaur and the battery
* after the seismo and the cable are buried, the hole should be covered with the original grass mat
* **installation of centaur and battery**
* in a distance of ca. 10 m the digitizer/centaur and the truck battery needs to be installed
* the distance should be far enough to not disturb the seismo
* the hole needs to be large enough to entirely bury the case
* a small trench needs to be digged from the seismo hole to the hole for the case
* the seismo cable needs to be buried beneath the grass mat within this little trench

**Centaur connections**

* the centaur needs to be connected:
* 1. with the seismo cable
* 2. with the power cable to the battery (red cable for positive, clamps fit only one way)
* 3. with the GPS sensor
* 4. with the Ethernet cable to the external Toughbook
* 5. with a copper metal wire for grounding reasons
* 🡪 a 32 Fat formatted SD Card has to be insert into the SD card slot
* the centaur and the truck battery should be placed inside the case
* through the little hole on the side of the case, the seismo cable goes into the box and the GPS cable and the copper wire go out of the case
* the GPS needs to be placed a bit outside of the box but very shallow, beneath the gras matt (the GPS sensor should be placed into a ziploc bag before)
* the copper metal wire needs to be attached to the stick and place a bit further away from the box
* **web interface**
* Toughbook needs to be checked for energy consumption/ accu duration
* tipe in browser **IP address**: **169.254.33.33**
* this should open the web interface
* different pages and settings
* its good to take some sreen shots from the settings with the camera for later
* keeping all configured settings as they are
* Data: sample rate 100 Hz
* **page Sensor**: Discovery: **admin** and **Cl1ffs**
* -> Sensor **Trillium Compact** klicken
* Current state of health -> channels -> mass position -> green should be leveled
* page Seismometer control -> use control line…. leave everything like it is
* page Events -> not important
* page waveform: good to check the signal
* **page maintenanc**e: 🡪 **archive files** 🡪 store 🡪 2016 and select the date and the single files
* is better to download the single files separately and manually
* 🡪 **is better to store the data on an external hard drive**!
* 🡪 **only for use in the office**! If the centaur needs to be shutted down (only necessary in the office!) you have to use the **maintenance page** and **shut down**!
* **in the field: if everything is fine and working (all lights are blinking green)- you just plug out the Ethernet cable out of the Centaur and leave everything as it is (all lights blinking green except for link)**
* **it is very important not to shut down!**
* after that, the case should be carefully closed and buried beneath the grass matt

Centaur Digital Recorder

SM 001504

Model: CTR 2-35-8

ASM: 17956 rev 5

Local IP: 169.254.33.33

* the seismometer, the centaur, the grounding stick and other little necessary things (cables, hooks and strings and batteries) are stored in Claires office
* shovels, bucket, plastic blanket, slab … are stored in the “aquarium” in the basement
* **things needed for installation:**

hardware:

* shovels
* bucket
* plastic blanket
* small shovel
* pickaxe
* sledgehammer
* normal hammer
* **slab**!
* plant soil
* string/ thin rope
* tape measure/meter stick
* gloves
* tape, knife
* different tools, toolbox
* material for fence?

software:

* tough book fully charged
* seismometer case with centaur and cables ect.
* truck battery fully charged
* case for centaur and battery
* lightening stick
* box with cables, string and copper wire
* compass!, GPS