

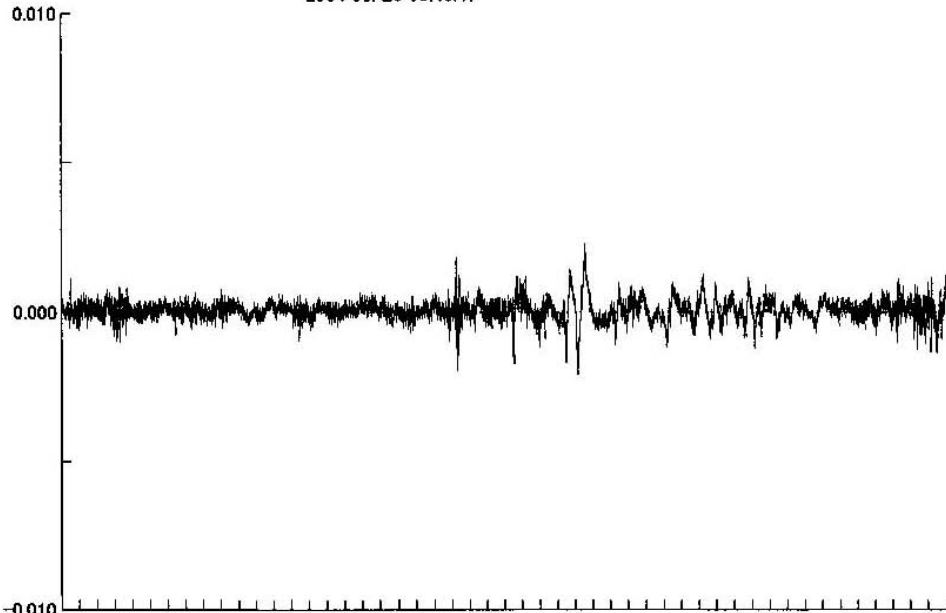
### 1.3. Temple of Three Windows: Structure vibration



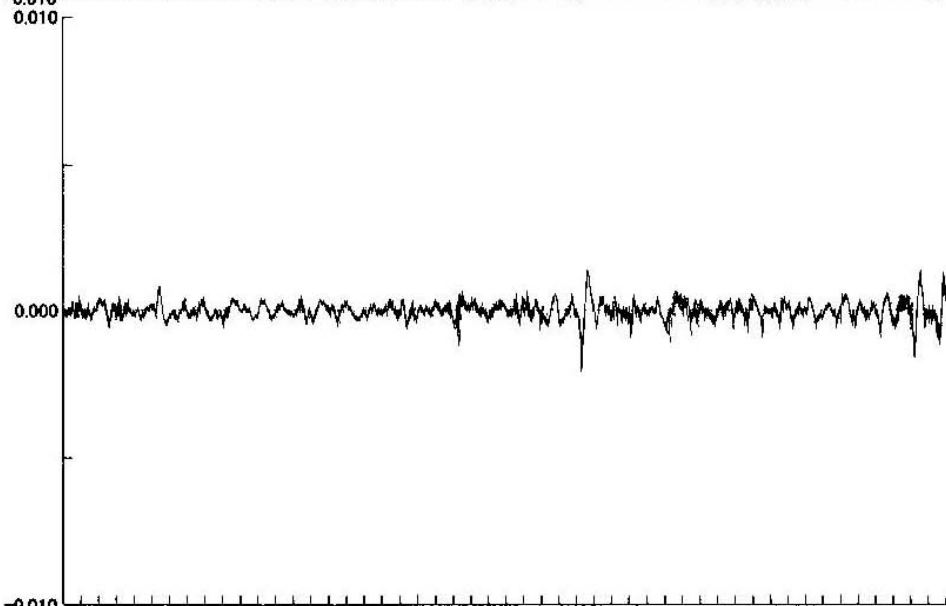
Horizontal components of microtremor were measured on the structure and over free field ground at this important part of the Machupicchu citadel. Two horizontal components in NS direction and EW direction were measured separately. Two sensors were located on the ground near the building, one in the external part and another one in the interior of the building. Also, one sensor was located on the central window and another one on the top of the building above the central window. The time domain plots of the measurements are given below.

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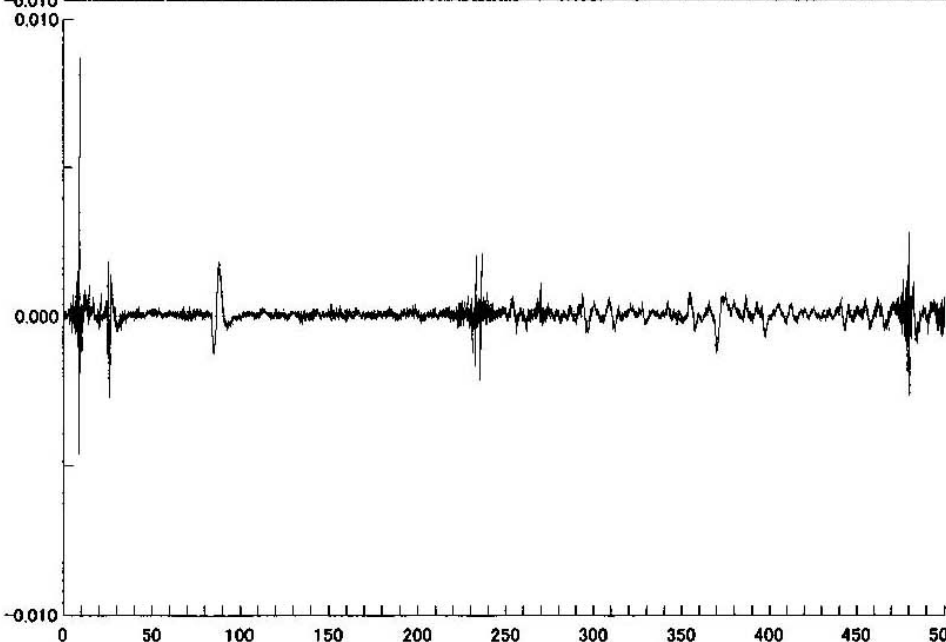
CH07:CH-7  
Max. = 0.002 (kine)  
Min. = -0.002 (kine)



CH08:CH-8  
Max. = 0.001 (kine)  
Min. = -0.002 (kine)



CH09:CH-9  
Max. = 0.009 (kine)  
Min. = -0.005 (kine)



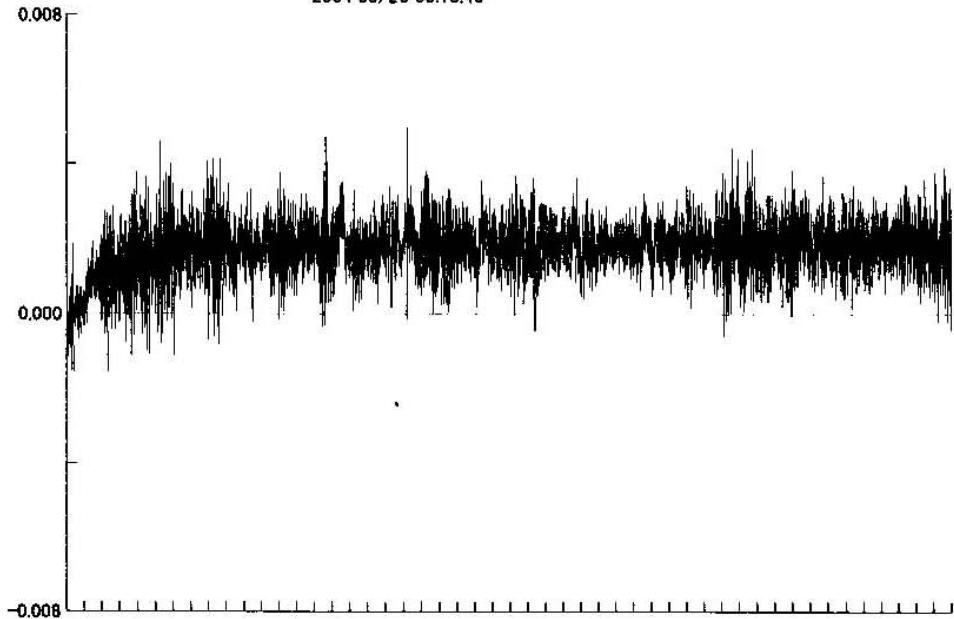
4 MACHUPICHU-3WINDOWS-EW

2004 06/20 05:15:48

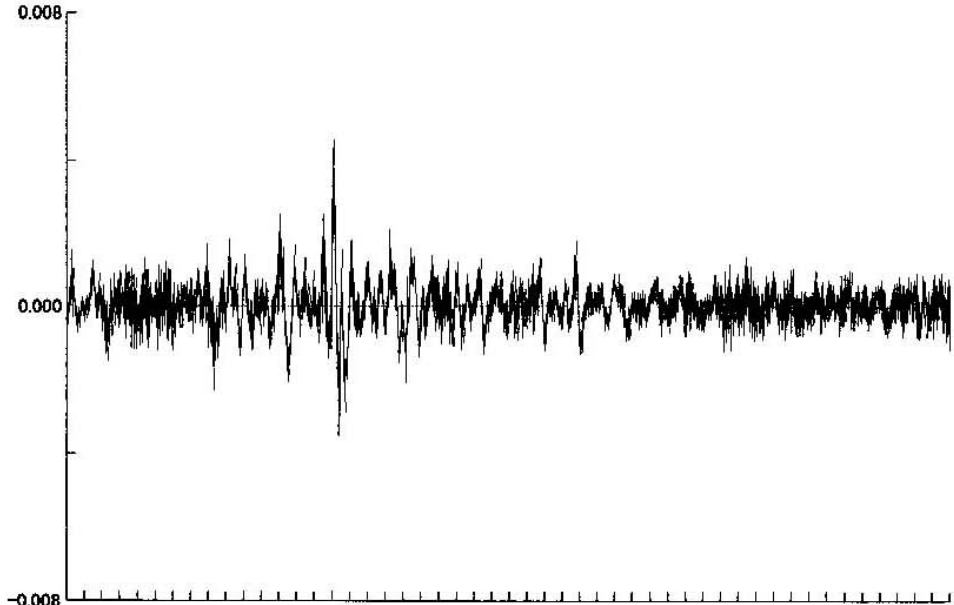
04 06 20 05 15 48

04 06 19 15 15 48

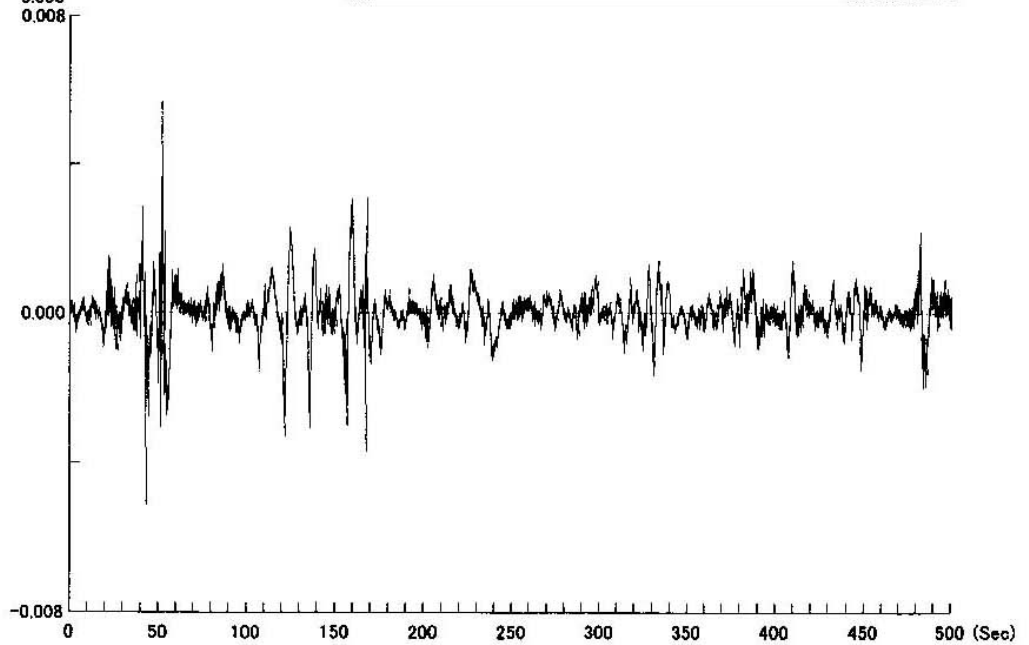
CH07:CH-7  
Max. = 0.005 (kine)  
Min. = -0.002 (kine)



CH08:CH-8  
Max. = 0.005 (kine)  
Min. = -0.004 (kine)



CH09:CH-9  
Max. = 0.006 (kine)  
Min. = -0.005 (kine)



#### 1.4. Principal Temple: Structure vibration



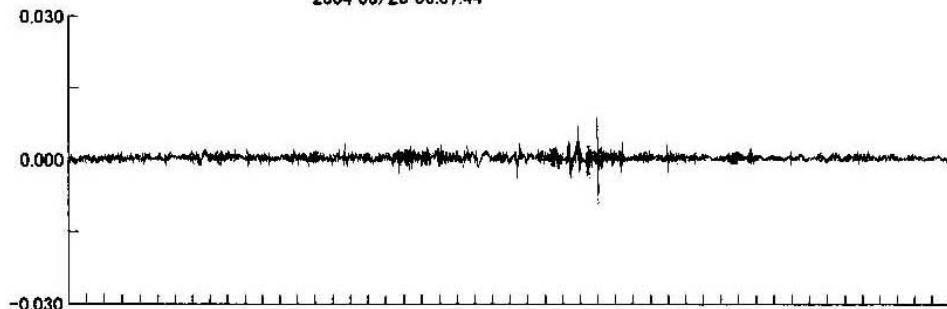
This structure shows evidence of ground settlement on its east wall (right hand side of the photograph). In this case the two horizontal components and the vertical component were measured at top of the wall and at ground level. The time domain plots are given below. The first three channels correspond to measurement on top of the wall while the last three channels are the three components over the ground.

6 MACHUPICHU-MAIN-TEMPLE-3comp

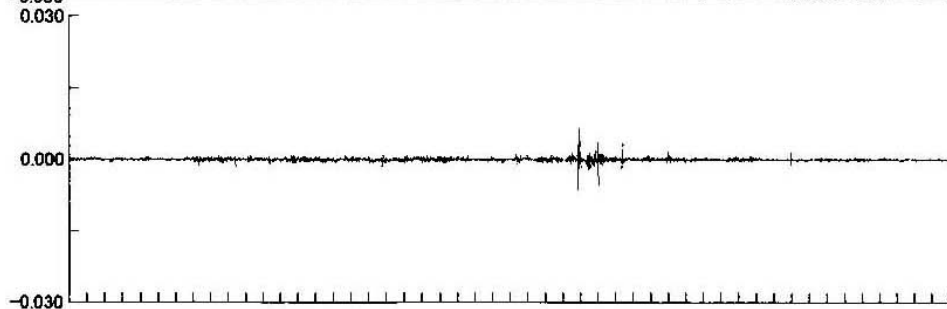
04 06 20 06 07 44 04 06 19 16 07 44

2004 06/20 06:07:44

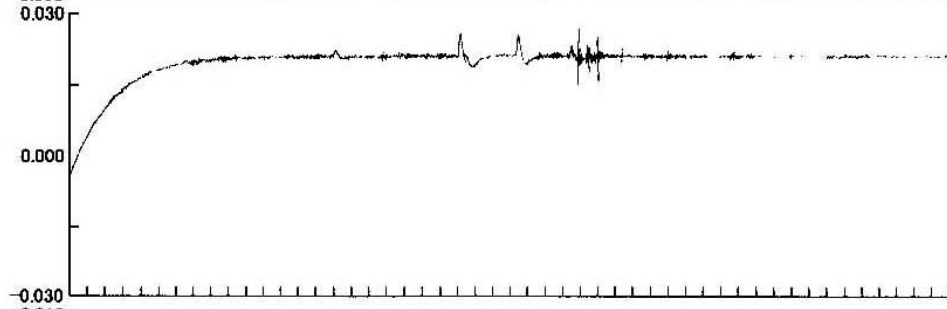
CH07:CH-7  
Max. = 0.009 (kine)  
Min. = -0.010 (kine)



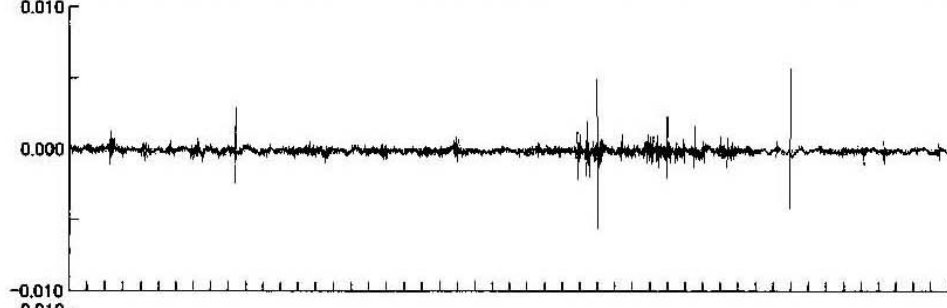
CH08:CH-8  
Max. = 0.007 (kine)  
Min. = -0.007 (kine)



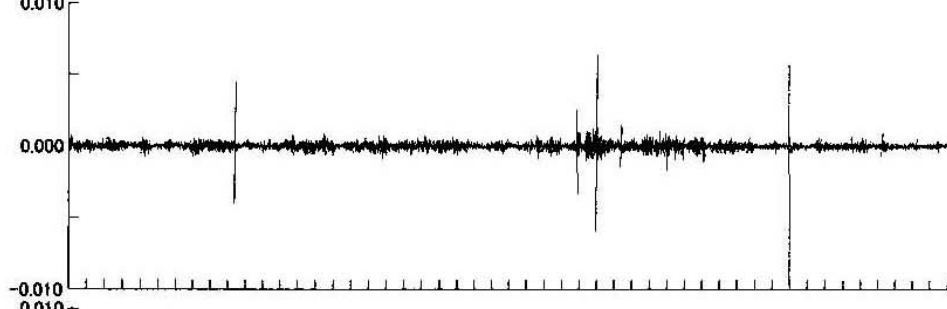
CH09:CH-9  
Max. = 0.027 (kine)  
Min. = -0.005 (kine)



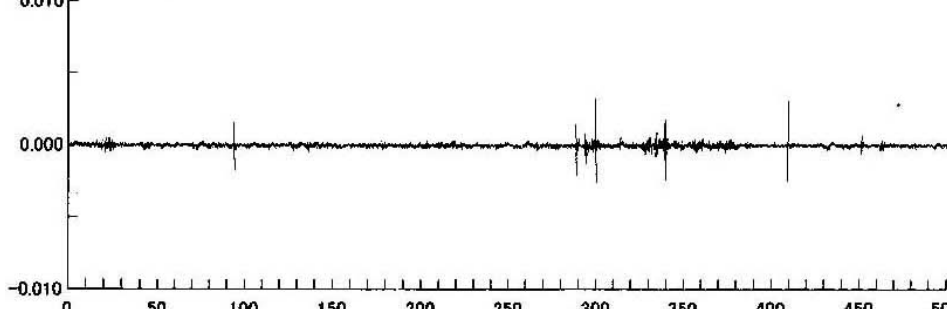
CH10:CH-10  
Max. = 0.006 (kine)  
Min. = -0.006 (kine)



CH11:CH-11  
Max. = 0.006 (kine)  
Min. = -0.010 (kine)



CH12:CH-12  
Max. = 0.003 (kine)  
Min. = -0.003 (kine)



0 50 100 150 200 250 300 350 400 450 500 (Sec)

## 1.5. Temple of the Sun: Structure vibration

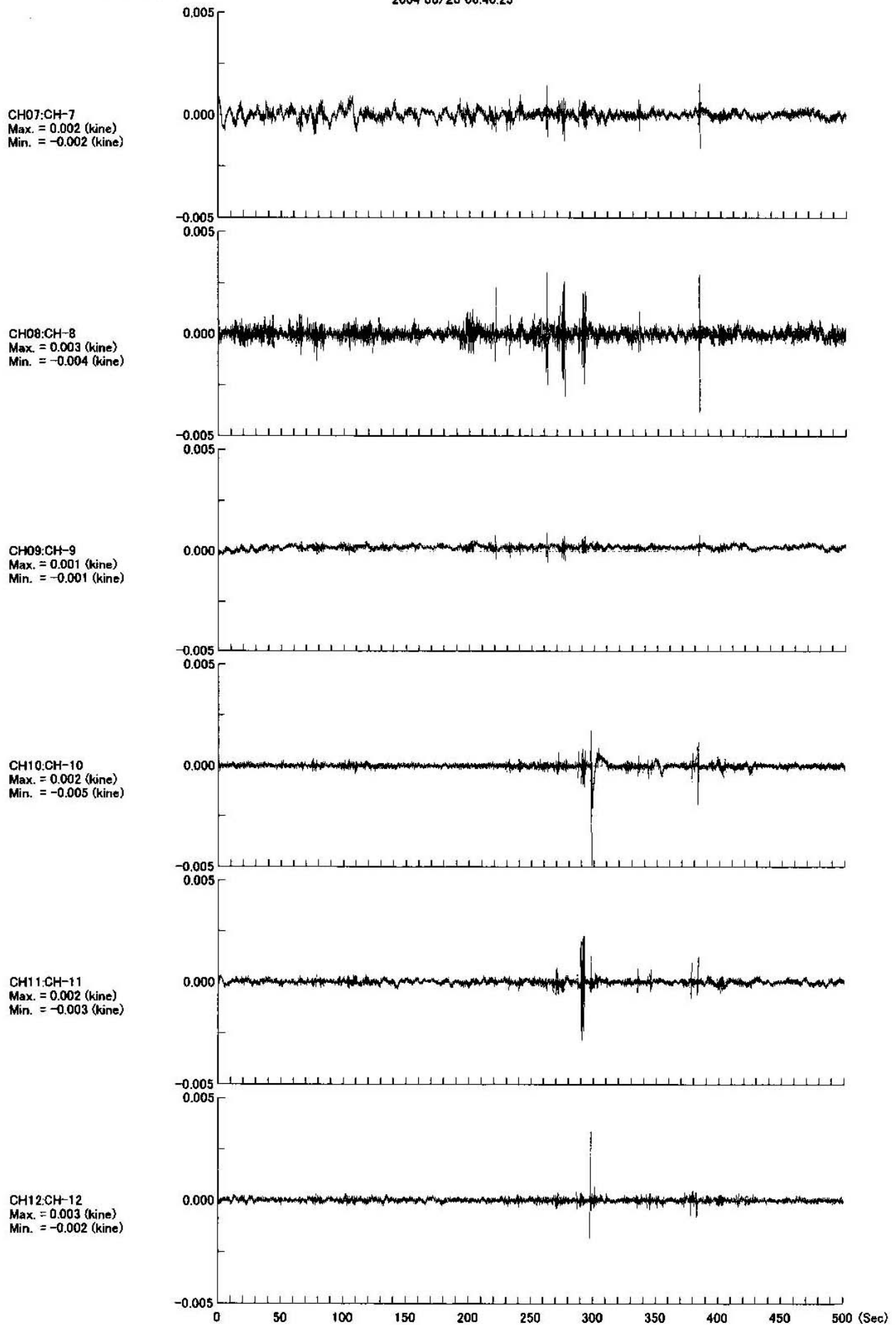


This structure consists of natural rock foundation, where the naturally located rocks are cut to shape with further addition wall over in-situ rock to provide continuous structural shape and stability (right hand side of the photograph). On top of the wall, a circular wall has been constructed which gives this complex the designation as temple of the sun. Three components of microtremors in the upper part and in the bottom part of the structure were measured simultaneously, of which the time domain plots are given below. The first three channels correspond to the upper part of the structure while the last three channels are three components over ground at lower level.

7 MACHUPICHU-TEMPLEOFSUN-3comp

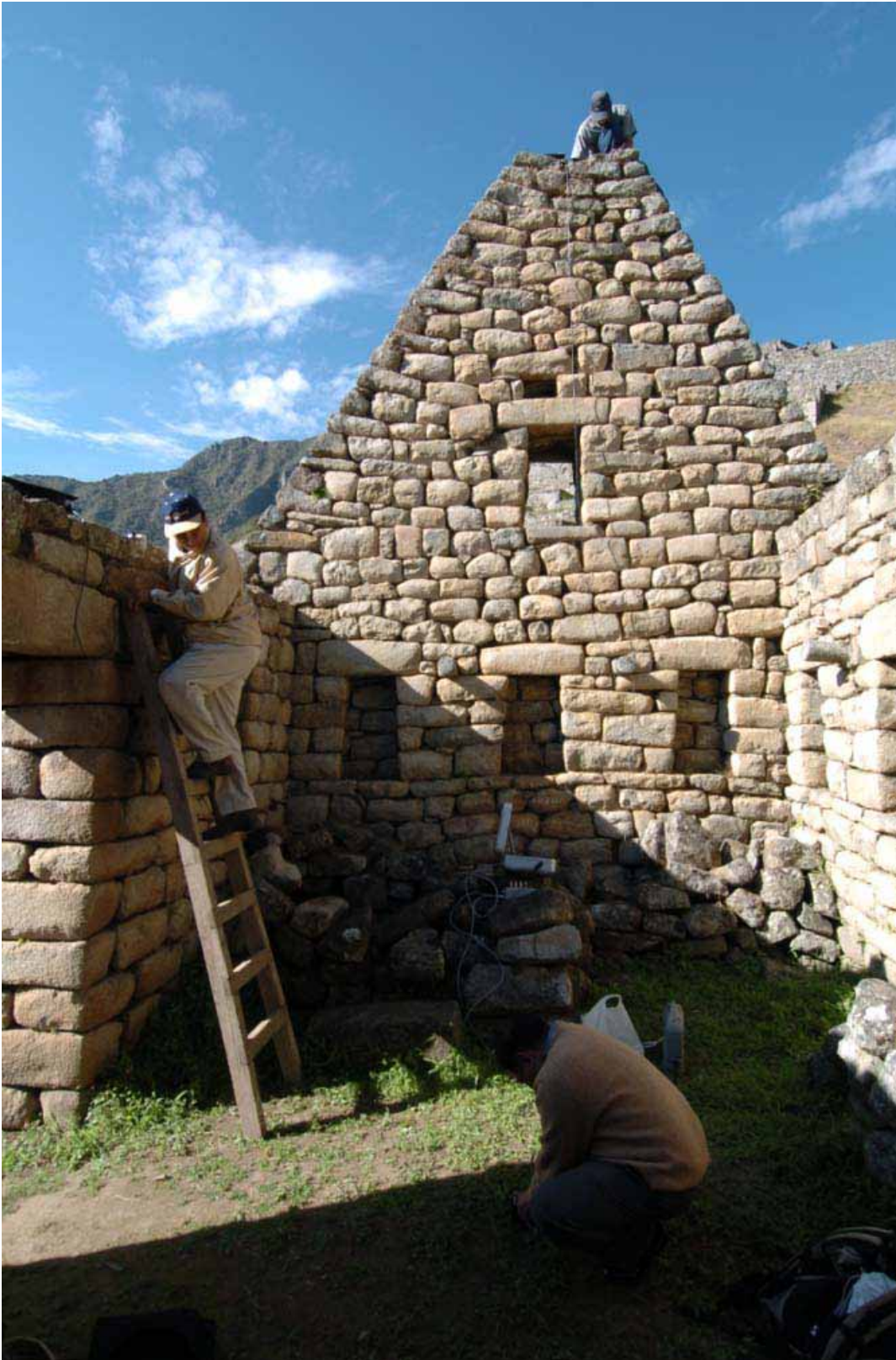
04 06 20 06 40 25 04 06 19 16 40 25

2004 06/20 06:40:25





### 1.6. Building No 7 of Group 2: Gable wall and structure vibration



In this case horizontal vibrations were measured. The points of measurement were: the ground, the top of the gable wall, and the top of the normal walls. Measurements were done for the NS direction and EW directions separately. The time domain plots are shown below.